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JOURNAL OF CLINICAL AND EXPERIMENTAL HYPNOSIS

VOLUME II • NUMBER 2
APRIL, 1954

UNIVERSITY OF MICHIGAN
JUN 2 - 1954
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• PUBLICATION OF •
THE SOCIETY FOR CLINICAL AND EXPERIMENTAL HYPNOSIS

Journal of
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It is the purpose of this Journal to present in an integrated manner the best research in scientific hypnosis and to encourage and support continued research.

The Journal of Clinical and Experimental Hypnosis is a quarterly research publication which appears regularly in January, April, July and October of each year.

Information regarding the preparation of manuscripts appears on inside back cover of this Journal. All authors should follow these directions.

Manuscripts should be addressed to the Editor:
DR. MILTON V. KLINE, 60 Knolls Crescent, Riverdale, New York City

Business communications should be addressed to the Publisher:
THE WOODROW PRESS, INC., 227 East 45th Street, New York 17, N. Y.
Attention: HENRY S. TUGENDER, *Vice President*

Subscription rates are $6.00 per year. Single copies can be obtained for $2.00 each

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CONTENTS

Editorial, JEROME M. SCHNECK 105

The Clinical Estimation of Suggestibility, AINSLIE MEARES 106

Special Techniques of Brief Hypnotherapy, MILTON H. ERICKSON . . 109

The Effects of Psychological Stress as Measured By a Decrease in the Number of Circulating Eosinophiles, WILLIAM M. WHEELER, KENNETH LITTLE, ROY M. DORCUS, THEODORE L. CLEMENS, THOMAS H. STERNBERG AND MURRAY C. ZIMMERMAN 130

Dehypnotization and Associated Words, JULIO DITTBORN 136

The Use of Hypnosis in the Differential Diagnosis of a Speech Disorder, LEROI MADISON 140

An Experimental Study of the Nature of Hypnotic Deafness: Effects of Delayed Speech Feed-back, MILTON V. KLINE, HENRY GUZE AND ARTHUR D. HAGGERTY 145

Changes of the Body Image in Hypnoanalysis, EDITH KLEMPERER . . 157

An Experimental Study of Hypnotically Induced Auditory Hallucinations, JEROME M. SCHNECK 163

THE BRITISH JOURNAL OF MEDICAL HYPNOTISM

Editor: Dr. S. J. Van Pelt.

Editorial Offices — 4 Victoria Terrace, Hove 3, Sussex, England

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Editorial

The Purpose of Our Journal

When evaluating recently the possibilities of additional financial support for our Journal, some ideas about the very purpose for its existence were reviewed. A hypnosis specialty journal assists investigators by providing much material in one easily available source. The good, publishable work on hypnosis which is appearing now is too voluminous for absorption by the best psychological and related journals without the percentage of such articles exceeding what the editors would be willing to accept. Some editors are prejudiced against hypnosis material consistent with the general attitude held by some scientists toward hypnosis research. Some productive workers in hypnosis require an outlet in addition to the journals which would take and do take their material. A good specialty journal stimulates meaningful clinical and experimental work. We believe that our Society and Journal have stimulated research and productivity among older investigators and new workers. Our Journal, in addition to our Society, has undoubtedly affected favorably the prestige of hypnosis research as a field for serious scientific study.

In addition to these purposes and services, our publication provides an opportunity for workers in many fields of professional activity to form a bond of mutual interest and to review with ease the work done by colleagues. Furthermore, some hypnosis articles are so specialized that they would probably be suited best for a periodical concentrating on hypnosis alone. Our Journal serves this function.

We believe that our Journal is of high calibre scientifically and maintains worthy professional standards. To continue this way and to improve further will require the combined efforts of editorial board and contributors.

It seems appropriate at this time to remind our readers, too, that 1954 represents the fifth anniversary of the founding of our Journal's sponsoring organization, The Society for Clinical and Experimental Hypnosis.

JEROME M. SCHNECK, M. D.

The Clinical Estimation of Suggestibility

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As far as hypnoanalysis is concerned, the commonly used tests for suggestibility, such as the hand-clasping test and the swaying test, have several distinct disadvantages. In the first place, there is a dramatic or bizarre quality about them which rather savours of the variety stage. This in itself is sufficient to alienate the sensitive patient, and in general makes the tests unsuitable for consulting-room practice. Again, the introduction of the necessarily authoritative attitude at the very beginning of treatment is technically bad.

In addition to this, there is a very real disadvantage in the fact that the patient knows he is being tested. If the patient does not prove to be very suggestible and the tests fail, the therapist is confronted with an inevitable loss of face.

Accordingly, it is a very considerable advantage if an estimate of suggestibility can be made unbeknown to the patient. This is particularly so when the patient has been referred for general psychiatric opinion, and the question of the possibility of treatment by hypnosis has not been mentioned to the patient.

If suggestibility can be estimated without the patient's knowledge, and the patient does not prove suggestible, then there is no reason why the patient should know that the thought of treatment by hypnoanalysis even entered the therapist's mind.

The Clinical Test

It has become the author's practice first to establish rapport during an unhurried interview in which the patient describes his symptoms and is given an opportunity to discuss superficial conflicts which he may care to ventilate. If it is thought that the patient may be suitable for treatment by hypnoanalysis, suggestibility is estimated during the ordinary physical examination.

The tendon reflexes are elicited with a heavy, soft plessor. At the same time the patient is told to relax his whole body, to let all his muscles go loose so that the reflexes can be tested. A few minutes can be spent repeating the suggestions and the elicitation of the tendon reflexes is continued in a leisurely manner so that the patient believes his relaxation is to aid the examination. The suggestions can be modified by telling the patient, "You don't move your legs, they are quite loose, it is I that moves them." So saying, the limb may be moved about passively, or moved reflexly by the knee-jerk.

Positive Response

Three types of response to these suggestions may be observed. Some patients give a positive response; they relax more or less completely, the muscles are flaccid, the limbs can be moved passively without inducing tension in the muscles. As the patient is lying on his back with his legs extended,

this is conveniently tested by rolling the leg inwards with the hand on the calf. If there is good relaxation, as soon as the leg is released, the weight of the foot rolls it back to the normal, semi-everted position. The relaxation in those patients who give a positive response usually extends to the face. This is shown by a general smoothing of the facial wrinkles. The forehead is ironed out. The nasolabial folds are less pronounced. There may be a slight separation of the lips. A gradual narrowing of the palpebral fissure is a very significant, positive sign, as is a spontaneous, relaxed closure of the eye-lids. A purposive shutting of the eyes has either no significance or may denote tension.

Patients who respond thus are suggestible and are easily hypnotized by suggestions of relaxation. The question of hypnoanalysis can then be discussed with the patient. At the next session the same procedure is repeated. Suggestions of heaviness and immobility are included with the suggestions of relaxation. Immobility of the legs, arms and eye-lids is induced and challenged.

No Response

Other patients make very little or no response to the suggestions of relaxation during the testing of the tendon reflexes. They remain objective about the whole procedure. They often make conversation consistent with normal politeness. Their muscles retain a good deal of tone. No change can be noticed in their facial expression.

These patients can usually be hypnotized, as can almost anyone, but it is probable that they will take several sessions before sufficient depth can be obtained for hypnoanalysis, whereas those who react positively usually reach sufficient depth by the second or third session. In general, this group is more difficult to handle in hypnoanalysis, and it might be thought wise to consider some other form of psychotherapy.

Negative Response

Some patients, instead of becoming more relaxed with the suggestions of relaxation, actually become more tense. The tone in their muscles increases. When the therapist puts his arm under their knees to elicit the knee-jerks, their heels often lift up off the couch. They are inclined to be restless. They cannot get comfortable. There is a tendency to wriggle about and fidget. Tension is seen in their facial expression. The patient is aware of his inability to relax, and the more the suggestions are repeated the greater is his discomfort and the greater the tension.

The important thing about such patients is that they are influenced by the suggestions. They are influenced negatively; but the fact that they are influenced means that they can be easily hypnotized, provided a suitable technique is used. If the negative response is well marked, they usually cannot be hypnotized by suggestions of relaxation which only provokes increased tension and restlessness. On the other hand, they are easily hypnotized by the arm levitation method. The general muscular tension which they experience seems to make it easy for them to lift the arm up into the air when appropriate suggestions of lightness are given.

The matter is complicated when the patient who responds to the test

negatively is really acting negativistically. Negativistic behaviour is still evidence that the patient is being influenced. Hypnosis can be induced, but again a suitable technique is all-important. With suggestions of relaxation these patients become more and more restless. If arm levitation is attempted, the patient will be seen to push his arm down on the table when the suggestions of lightness are given. A very satisfactory method with negativistic patients is to induce hypnosis by initiating repetitive movements of the arms. The arm is taken by the cuff and is wobbled backwards and forwards. At the same time the patient is given the suggestion, "Your arm goes back and forth, back and forth, back and forth. It goes back and forth automatically, automatically back and forth." With the negativistic patient it will soon be seen that the arm spontaneously moves forward when the suggestion of backward movement is given. Similarly, it moves back with the suggestion of forward movement. By this means, repetitive movement is established and the patient hypnotized.

Advantages of the Method

The repeated elicitation of the tendon reflexes in itself appears to aid relaxation. The effect is probably produced through the mechanism of non-verbal suggestion.

The association of the reflex movement of the limb with the verbal suggestions accustoms the patient to the phenomenon of the involuntary movement of his limbs in response to suggestion, and so paves the way for hypnosis.

The method has the advantage of not only estimating suggestibility, but of also acting as a reliable guide as to the best method for the induction of hypnosis.

The patient is unaware that he is being tested for hypnosis. If he proves unsuitable, the subject need not be discussed. There is no disappointment of the patient; no loss of face on the part of the therapist. There is nothing to endanger rapport, so the therapist is left free to treat the patient by some other method.

Special Techniques of Brief Hypnotherapy

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The development of neurotic symptoms constitutes behavior of a defensive protective character. Because it is an unconscious process, and thus excluded from conscious understandings, it is blind and groping in nature and does not serve personality purposes usefully. Rather it tends to be handicapping and disabling in its effects. Therapy of such distorted behavior ordinarily presupposes that there must be a correction of the underlying causation. However, such correction, in turn, presupposes not only a fundamental willingness on the part of the patient for adequate therapy but also an actual opportunity and situation conducive to treatment. In the absence of one or both of these requisites, psychotherapeutic goals and methods must be reordered to meet as adequately as possible the total reality situation.

In attempting such modified psychotherapy, the difficult problem arises of what can really be done about neurotic symptomatology where the realities of the patient and his life situation constitute a barrier to comprehensive treatment. Efforts at symptom removal by hypnosis, persuasion, reconditioning, etc. are usually futile. Almost invariably there is a return to the symptomatology in either the same form or another guise, with increased resistance to therapy.

Equally futile, under such limiting circumstances, is any effort to center treatment around idealistic concepts of comprehensiveness, or, as is unfortunately too often the case, around the therapist's conception of what is needed, proper and desirable. Instead, it is imperative that recognition be given to the fact that comprehensive therapy is unacceptable to some patients. Their total pattern of adjustment is based upon the continuance of certain maladjustments which derive from actual frailties. Hence, any correction of those maladjustments would be undesirable if not actually impossible. Similarly, the realities of time and situational restrictions can render comprehensive therapy impossible and hence, frustrating, unacceptable and actually intolerable to the patient.

Therefore, a proper therapeutic goal is one that aids the patient to function as adequately and as constructively as possible under those handicaps, internal and external, that constitute a part of his life situation and needs.

Consequently, the therapeutic task becomes a problem of intentionally utilizing neurotic symptomatology to meet the unique needs of the patient. Such utilization must satisfy the compelling desire for neurotic handicaps, the limitations imposed upon therapy by external forces, and, above all, provide adequately for constructive adjustments aided rather than handicapped by the continuance of neuroticisms.

Such utilization is illustrated in the following case reports by special hypnotherapeutic techniques of symptom substitution, transformation, amelioration and the induction of corrective emotional response.

Symptom Substitution

In the two following case histories, neither a willingness for adequate therapy nor a favorable reality situation existed. Hence therapy was based upon a process of *Symptom Substitution,* a vastly different method from *symptom removal.* There resulted a satisfaction of the patient's needs for defensive neurotic manifestations and an achievement of satisfactory adjustments, aided by continued neurotic behavior.

Patient A

A fifty-nine-year-old, uneducated, manual laborer, who had worked at the same job for thirty-four years with the expectation of a pension at the end of thirty-five years, fell and injured himself slightly. He reacted with an hysterical paralysis of the right arm. The company physician agreed to one week's hospitalization. Then, if the patient had not recovered from his "nonsense" at the expiration of that time, he was to be discharged as mentally ill with forfeiture of his pension.

Examination of the man disclosed his arm flexed at the elbow and held rigidly across the chest, with the hand tightly closed. During sleep the arm was relaxed, and the original diagnosis of an hysterical disability was confirmed.

No history other than the above was obtained since the patient was uncommunicative and spent his waking time groaning and complaining about severe pain.

After enlisting the aid of two other physicians, an elaborate physical examination was performed. The findings were discussed with much pessimism and foreboding about his recovery. This was done in low tones, barely but sufficiently audible to the patient. Everbody agreed that it was an "Inertia Syndrome," but that hypnosis would have to be performed in order to confirm that diagnosis. The prognosis was solemnly discussed and everyone agreed that, if it were the serious condition suspected, its course would be rapid and characteristic. This progression of the disease would be characterized by a relaxation of the shoulder joint, permitting arm movement within the next two days. Unfortunately, this would be accompanied by a "warm, hard feeling" in the right wrist. Then the elbow would lose its stiffness, but this would settle in the wrist. Finally, within the week's time, the fingers would relax and their stiffness would also settle in the wrist. This wrist stiffness would lead to a sense of fatigue in the wrist, but only upon use of the right arm. During rest and idleness there would be no symptomatology. Impressive medical terminology was freely employed during this discussion, but every care was taken to insure the desired understanding of it by the patient. The patient was approached about hypnosis and readily agreed. He developed a good trance, but retained his symptoms in the trance state.

A physical reexamination was enthusiastically performed and the same discussion was repeated, this time in a manner expressive of absolute conviction. With definite excitement, one of the physicians discovered signs of relaxation of the shoulder muscles. The others confirmed his discovery. Then "tests" applied disclosed "early changes in the first, fourth and fifth nerves" of the elbow. All agreed, after solemn debate, that the second and third

nerve changes should be slower, and that the general pattern left no doubt whatsoever about the diagnosis of "Inertia Syndrome," and its eventual and rapid culmination in a permanent wrist impairment. All agreed that there would be free use of the arm, and that the wrist fatigue would be apparent but endurable during work. Everyone was pleased that it was a physical problem that could be surmounted and not a mental condition.

The patient's progress was exactly as described to him. Each day the physicians solemnly visited him and expressed their gratification over their diagnostic acumen.

He was discharged at the end of the week with his stiff wrist. He returned to work, completed the year and was retired on a pension. The wrist had troubled him with its fatiguability but had not interfered with his work. Upon retiring all symptomatology vanished.

However farcical the above procedure may seem in itself, it possessed the remarkable and rare virtue of being satisfying to the patient as a person and meeting his symptomatic needs adequately.

Patient B

A factory laborer, following a minor injury at work, developed an hysterical paralysis of the right arm which invalided him. A settlement had been made which would be exhausted in less than another year. At the insistence of the company physician he was sent to the writer for hypnotic therapy. The patient was antagonistic toward treatment, felt that the company was victimizing him, and stated that he would agree to only three sessions.

On taking his history it was learned that, several years previously, he had had removed by hypnotic suggestion a paralysis of the left leg. However, shortly after his "recovery," his left arm became paralyzed. Again hypnotic suggestion had effected a cure, followed shortly by a right leg paralysis. This, too, had been cured by hypnotic suggestion and now he had a right arm paralysis.

This background suggested both the inadvisability of direct hypnosis and a need by the patient for some neurotic handicap.

Accordingly, the company physician was immediately consulted and therapeutic plans outlined. He agreed to them and promised full cooperation on the part of the company for a work placement for the patient.

A therapeutic approach was made by bringing out medical atlases and discussing endlessly and monotonously, in pseudo-erudite fashion, muscles, nerves, blood vessels and lymphatic channels. This discussion was increasingly interspersed with trance suggestions until the patient developed a somnambulistic trance state.

The whole discussion was then repeated, and to it was added the reading from textbooks of carefully chosen sentences describing the fleeting, evanescent and changing symptoms of multiple sclerosis and other conditions, interspersed with illustrative, fabricated case histories. The possibility of a comparable changing symptomatology for him and its possible and probable establishment in a permanent fashion was insidiously and repetitiously hinted.

The next two sessions were of a comparable character, except for the fact

that numerous pseudo-tests were made of the nerves in his arms. These tests were interpreted conclusively to signify that a certain final, permanent disability would be an inevitable development. This would be the loss of the functioning of his right little finger but with full use otherwise of the whole arm.

The third session was completed by a review of the pseudo-test findings, and a consultation of the medical atlases with numerous references to textbooks. All this led to the inevitable conclusion that, within another month, there would be a numbness and stiffness of his little finger which would always be slightly unpleasant but which would not interfere with his employment.

Approximately a month later, the patient volunteered to relinquish half of the remaining weekly disability for a lump sum settlement and reinstatement at work. This was granted and he applied the money to the mortgage on his home.

The company physician secured a placement where a disabled right little finger did not constitute a problem.

Three years later the man was still steadily and productively employed. However, he had informed the company physician that the writer was mistaken in one regard. This was that his finger was not constantly crippled but that the condition waxed and waned from time to time, never really causing difficulty but merely making itself apparent.

Comment

Little discussion of these two case histories is necessary. Apparently both patients needed desperately a neurotic disability in order to face their life situations. No possibility existed for the correction of causative underlying maladjustments. Therefore, as therapy, there was substituted for the existing neurotic disability another, comparable in kind, non-incapacitating in character and symptomatically satisfying to them as constructively functioning personalities. As a result both received that aid and impetus that permitted them to make a good reality adjustment.

Although more in the way of understanding the total problem could be desired, the essential fact remains that the patients' needs were met sufficiently well to afford them the achievement of a satisfying, constructive personal success.

Symptom Transformation

In the next two case histories, the therapeutically restricting factors were the limitations imposed by time and situational realities. Accordingly, therapy was based upon a technique of *Symptom Transformation*. While seemingly similar to symptom substitution, it differs significantly in that there is a utilization of neurotic behavior by a transformation of the personality purposes served without an attack upon the symptomatology itself.

In understanding this technique it may be well to keep in mind the patter of the magician which is not intended to inform but to distract so that his purposes may be accomplished.

Patient C

During the psychiatric examination, a selectee, otherwise normal in his adjustment, disclosed a history of persistent enuresis since the age of puberty. Though much distressed by this, he had otherwise made a good social, personal and economic adjustment. However, because of his enuresis, he had never dared to be away from home overnight, although he had often wished to visit his grandparents and other relatives who lived at a considerable distance. Particularly did he wish to visit them because of impending military service. He was much distressed to learn that enuresis would exclude him from service and he asked urgently if something could be done to cure him. He explained that he had taken barrels of medicine, had been cystoscoped, and numerous other procedures had been employed upon him, all to no avail.

He was told that he could probably get some effective aid if he were willing to be hypnotized. To this he agreed readily and he developed a profound trance quickly. In this trance state he was assured most emphatically that his bed wetting was psychological in origin and that he would have no real difficulty of any sort in overcoming it if he obeyed instructions completely.

In the form of posthypnotic suggestions, he was told that, upon returning home, he was to go to the neighboring city and engage a hotel room. He was to have his meals sent up to him and he was to remain continuously in that room until three nights had elapsed.* Upon entering the room he was to make himself comfortable and he was to begin to think about how frightened and distressed he would be when the maid, as his mother always did, discovered a wet bed the next morning. He was to go over and over these thoughts, speculating unhappily upon his inevitable humiliated, anxious and fearful reactions. Suddenly the idea would cross his mind about what an amazing but bitter joke it would be on him if, after all this agonized thinking, the maid were surprised by a dry bed.

This idea would make no sense to him and he would become so confused and bewildered by it that he would be unable to straighten out his mind. Instead, the idea would run through his mind constantly and soon he would find himself miserably, helplessly and confusedly speculating about his shame, anxiety and embarrassment when the maid discovered the dry bed instead of the wet bed he had planned. This thinking would so trouble him that finally, in desperation, he would become so sleepy that he would welcome going to bed, because, try as he might, he would not be able to think clearly.

Then the next morning his first reaction would be one of abject fear of remaining in the room while the maid discovered the dry bed. He would search in his mind frantically for some excuse to leave and fail, and have to stare wretchedly out of the window so that she would not see his distress.

The next day, beginning in the afternoon, the same bewildered, con-

*The rationale of three nights was simply this: If the plan were effective, the first night would be one of doubt and uncertainty, the second would be one of certainty, and the third would bridge a transition from bedwetting anxiety to another anxiety situation.

fused thinking would recur with the same results, and the third day would be another repetition of the same.

He was told further that, upon checking out of the hotel after the third night, he would find himself greatly torn by a conflict about visiting his grandparents. The problem of whether he should visit the maternal or the paternal set of grandparents first would be an agonizing, obsessional thought. This he would finally resolve by making the visit to the first set one day shorter than that to the second. Once arrived at his destination he would be most comfortable and would look forward happily to visiting all of his relatives. Nevertheless, he would be obsessed with doubts about which to visit next, but always he would enjoy a stay of several days.

All of these suggestions were repetitiously reiterated in an effort to insure the implantation of these pseudo-problems, and to effect a redirection of his enuretic fears and anxieties and a transformation of them into anxieties about visits with relatives, and not anxiety about a wet bed for his closest relative, his mother.

Finally he was dismissed after approximately two hours' work with a post-hypnotic suggestion for a comprehensive amnesia. Upon awakening he was told briefly that he would be recalled in about three months and that he would undoubtedly be accepted for military service then.

About ten weeks later he was seen again by the writer as the consultant for the local draft board. He reported in detail his "amazing experience" at the hotel with no apparent conscious awareness of what had occasioned it. He explained that he "almost went crazy in that hotel trying to wet that bed but I couldn't do it. I even drank water to be sure but it didn't work. Then I got so scared I pulled out and started to visit all my relatives. That made me feel all right, except for being scared to death about which one to see first, and now I'm here."

He was reminded of his original complaints. With startled surprise, he replied, "I haven't done that since I went crazy in the hotel. What happened?"

Reply was made simply that what had happened was that he had stopped wetting the bed and now could enjoy a dry bed.

Two weeks later he was seen again at the induction center at which time he was readily accepted for service. His apparent only anxiety was his concern about his mother's adjustment to his military service.

Patient D

A selectee, greatly interested in entering military service, disclosed upon psychiatric examination a rather serious, closely circumscribed neurosis which embarrassed him tremendously. His difficulty lay in the fact that he was unable to urinate unless he did so by applying an 8" or 10" wooden or iron pipe to the head of the penis, thus urinating through the tube.

Since, in all other regards, he seemed to be reasonably well adjusted and had a good work and social history, the conclusion was reached that the man might be amenable to brief hypnotherapy.

His history disclosed that as a small boy he had urinated through a knothole in a wooden fence bordering a golf course. He was apprehended from in front and behind and was severely punished, embarrassed and

humiliated. His reaction had been one of a repetition compulsion, which he had solved by securing a number of metal or wooden tubes. These he had carried with him constantly. He gave his story frankly and fully, though much embarrassed by it.

A deep trance was readily induced and the history already given was confirmed. His attitude toward military service was found to be good and he was actually willing to enter military service with his handicap, provided it occasioned him no significant embarrassment.

A long, detailed explanation in the form of post-hypnotic suggestions was given to him about how this could be done. He was urged to secure a length of bamboo 12″ long* and to mark it on the outside in quarter inches and to use that in urinating. This he was to hold with his thumb and forefinger, alternately with the right and left hand as convenient, and to flex the other three fingers around the shaft of the penis. Additionally, he was instructed to try with his thumb and forefinger to sense the passage of urine through the bamboo. No actual mention was made of feeling the passage of urine through the urethra with the other fingers. He was also told that in a day or two, or a week or two, he might consider how long the bamboo needed to be and whether or not he could saw off ¼″, ½″, or even 1″, but that he need not feel compelled to do so. Rather, he should let any reduction in the length of the bamboo come about easily and comfortably, and he should be interested only in wondering on what day of the week he might reduce the length of bamboo. Also, he was told to be most certain to have the three fingers grasping the shaft of the penis so that he could notice better the flow of urine through the bamboo. As for military service, he would be rejected at the present, but arrangements would be made to have him called up in three months' time for a special psychiatric examination. At that time he would undoubtedly be accepted.

The interview was closed with two final, post-hypnotic suggestions. The first was directed to a total amnesia for the entire trance experience. The other was concerned with the securing and preparation of the bamboo with no conscious understanding of the purpose.

About three months later his local draft board sent him for a special psychiatric examination to the writer, the consulting psychiatrist for that draft board. The young man was surprised and delighted. He explained that he had obeyed instructions, that he had been greatly astonished and bewildered to find himself buying the bamboo and then much embarrassed by the sudden rush of memories. At first distressed by his violation of the amnesia instructions, he soon began to develop a tremendous sense of hope and belief that he would solve his problem. He practiced urinating with the bamboo tube for about a week and then reached the conclusion that he could saw off about ½″ and was much puzzled when he actually sawed off a full inch. This pleased him greatly and he wondered when he

*A tube definitely longer than those he had been using was suggested. His acceptance of the longer tube constituted a reality acknowledgment that the writer could do something about the tube, namely, make it longer. Equally significant is the unrecognized implication that the writer could make it shorter. Additionally, the tube was neither wood nor iron, it was bamboo. Thus, in essence, three transformation processes, longer, shorter and material, had been initiated.

would saw off some more and he realized suddenly that it would occur on a Thursday. (Why Thursday could not be explained.) On that occasion he sawed off 2″ and a few days later another inch. At the end of the month he had a ¼″ ring of bamboo left. While using it one day, he realized that the flexion of the three fingers around the shaft of the penis gave him a natural tube. Therefore, he discarded the remains of the original bamboo and took great delight in urinating freely and comfortably. He did so with both the right and left hand and even experimented by extending the little finger and then realized that he could urinate freely without resort to any special measure. He was then taken to the lavatory and asked to demonstrate. He immediately raised the question, "Where are you going to stand? Behind me?" Thereupon he laughed and said, "This is not a board fence. That belongs in my past history. You can stand where you want. It makes no difference to me."

A week later he was called up for induction. He was amused by his past difficulties and wondered why he had not had "enough brains" to figure out his particular problem by himself. He was assured that people usually do not know how to handle such simple things, that they have difficulty because of trying too hard.

The total duration of the therapeutic trance, somnambulistic in character, was less than an hour.

The entire procedure and its outcome demonstrate the ease and effectiveness with which symptomatology can be utilized to secure a transformation of a neurotic problem. The incapacitating wooden or metal tube was transformed into bamboo, then into the cylinder formed by the middle, third and little finger and then into the tube constituted by the phallus.

Comment

In both of these patients anxiety, precipitated by unhappy reactions of other people, existed in relation to a natural function. Therapy was accomplished by systematically utilizing this anxiety by a process of redirecting and transforming it. By thoroughly confusing and distracting Patient C, his anxiety about a wet bed was transformed into anxiety about a dry bed. Then his anxiety about his wet bed-home relationships was transformed into anxiety about relatives. The final transformation became that of his mother's anxiety about his military service.

For Patient D, the transformation of anxiety progressed from: kind of tube; to sensing the passage of urine; to the shortening of the tube; to the question of the day for shortening the tube; and finally, into the unimportant question of where the writer would stand.

Thus, for both patients, the utilization of anxiety by a continuance and a transformation of it provided for a therapeutic resolution into a normal emotion permitting a normal adjustment, known to have continued for nine months while in service. Contact was then lost.

Symptom Amelioration

Not infrequently in neurotic difficulties there is a surrender of the personality to an overwhelming symptom-complex formation, which may

actually be out of proportion to the maladjustment problem. In such instances, therapy is difficult since the involvement of the patient in his symptomatology precludes accessibility. In such cases a technique of *Symptom Amelioration* may be of value. In the two following cases an overwhelming, all-absorbing symptom-complex existed; therapy had to be based upon an apparently complete acceptance of the symptoms and it was achieved by ameliorating the symptoms.

Patient E

A seventeen-year-old, feeble-minded boy made poor adjustment when sent to a training school for delinquents. Within a month he had developed a rapidly alternating flexion and extension of the right arm in the horizontal plane at the cardiac level. When he was seen some six weeks later in the hospital, a diagnosis had been made of an hysterical reaction, probably on the basis of masturbation fears and his maladjustment in the training school. Physical examination disclosed essentially a glove anaesthesia extending up to the elbow of the right arm and the rapid (135 times a minute) flexion and extension of that arm. Both the anaesthesia and the muscular activity disappeared upon physiological sleep and reappeared upon awakening.

Because of his low intelligence, I.Q. 65, efforts at psychotherapy proved futile and hypnotherapy was suggested.

Accordingly, hypnosis was employed in daily sessions for three weeks before a sustained trance could be obtained. Although he went into a trance readily, he would immediately drift into physiological sleep and would have to be awakened and a new trance induced. Finally, by the measure of hypnotizing him in the standing position and walking him back and forth, a prolonged trance could be secured. The trance state, however, had no effect upon his symptoms.

Efforts made to reduce the frequency of his arm movements failed. His only response was "Can't stop. Can't stop." Similarly, efforts to discuss his problem or to elicit information failed. His communications were in essence, "My arm, my arm, I can't stop it."

After daily sessions for a week, during which time an interne ostentatiously made repeated counts each day of the movements per minute, a new technique was devised. This was simply a measure of suggesting that the rate would be increased from 135 to 145 per minute and that this increased rate would persist until seen again. The next day the suggestion was offered that it would decrease to the usual 135 until seen again. Again it was increased to 145 and again decreased to 135. After several such repetitions, with the count checked repeatedly by the interne and found to be approximately correct, further progress was made by suggesting alternating increments and decrements, respectively 5 and 10 points, of the rate of the arm movement. This was continued day after day until a rate of 10 per minute was reached. Then the technique was reversed to increase the rate to 50 movements per minute. Again it was reduced to a rate of 10 per minute. Suggestion was offered that this rate would continue for a few days and then drop to 5 per minute and then "increase" to 20

or 30 or more a day. A few days later the rate shifted from 5 per minute to scattered isolated movements per day. The patient himself kept count of these, the daily total ranging around 25. Next the suggestion was given that this count would diminish day by day until it was around 5, and then it would "increase to as high as 25 times a week." The patient responded as suggested and then he was asked to "guess on what day" there would be no uncontrolled movements.

Shortly he "guessed" the day when no movements would occur and demonstrated the correctness of his conjecture.

Further "guessing" on the patient's part led within a few days to his demonstration that he was free of his disability and was continuing so.

During the process of diminishing the arm movement symptom, there was noted a parallel behavior of the glove anaesthesia. It waxed and waned in direct relation to the arm activity. It vanished along with that symptom.

A month later he was returned to the training school and intentionally assigned to the task of kneading bread dough by hand in the institutional bakery. A year later he was still adjusting satisfactorily.

Patient F

A mental hospital employee was referred to the writer because of sudden acute blindness which had developed on his way to work that morning. He was led into the office in a most frightened state of mind. Hesitantly and fearfully he told of having eaten his breakfast that morning, laughing and joking with his wife, and of suddenly becoming extremely disturbed by some risque story his wife related. He had angrily left the house and decided to walk to work instead of taking the bus as was his usual custom. As he rounded a certain street corner, he suddenly became blind. He had developed a wild panic and a friend passing along the highway in a car had picked him up and brought him to the hospital. The ophthalmologist had examined him immediately and then referred him to the writer. The man was much too frightened to give an adequate story. He did state that he and his wife had been quarreling a great deal recently and that she had been drinking at home and he had found hidden bottles of liquor. She had vigorously denied drinking.

When asked what he was thinking about as he left the house, he explained that he was much absorbed in his anger at his wife, feeling that she should not be telling off-color stories, and that he had a vague feeling of apprehension, believing that he might be heading for the divorce court.

He was asked to trace his steps mentally from his home up to the point of the sudden onset of his blindness. He blocked mentally on this. He was asked to describe that particular street corner and his reply was that, although he had walked around it many, many times, he could not remember anything about it, that his mind was a total blank.

Since the street corner involved was well-known to the writer, various leading questions were asked without eliciting any material from him. He was then asked to describe exactly how the blindness had developed. He stated that there had occurred a sudden flash of intense redness, as if he were staring directly into a hot, red sun. This redness still persisted

and, instead of seeing darkness or blackness, he was seeing nothing but a brilliant, blinding, saturated red color. He was oppressed by a horrible feeling that, for all the rest of his life, he would never be able to see anything but an intense, glaring red. With this communication the patient became so hysterically excited that it was necessary to sedate him and put him to bed.

After the patient had been put to bed, his wife was summoned to the hospital. With much difficulty and after many protestations of unfailing love for her husband, she finally confirmed her husband's story of her alcoholism. She refused to relate the story that had precipitated the quarrel, merely stating that it had been a risque story about a man and a redheaded girl which had really meant nothing.

She was told where her husband had developed his sudden blindness and asked what she knew about the street corner. After much hedging she recalled that there was a service station on the opposite side of the street. This she and her husband often patronized in buying gas for their car. After still further insistent questioning, she recalled a service station attendant there who had brilliant red hair. Then finally, after many reassurances, she confessed to an affair with that attendant, commonly known as "Red." On several occasions he had made unduly familiar remarks to her in her husband's presence which had been intensely resented. After much serious thinking she declared her intention to break off the affair, if the writer would cure her husband of his blindness, and demanded professional secrecy for her confidences. Her husband's unconscious awareness was pointed out to her and she was told that any further betrayal would rest entirely upon her own actions.

When the patient was seen the next day, he was still unable to give any additional information. Efforts were made to assure him of the temporary nature of his blindness. This reassurance he was most unwilling to accept and he demanded arrangements to be made to send him to a school for the blind. With difficulty he was persuaded to accept therapy on a trial basis, but on the condition that nothing be done about his vision. When he finally consented, the suggestion of hypnosis was offered as an appropriate, effective therapy for his purposes. He immediately asked if he would know what happened if he were in a trance. Such knowledge, he was told, could remain only in his unconscious, if he so wished, and thus would not occasion him trouble in the waking state.

A deep trance was readily induced, but the patient refused at first to open his eyes or test his vision in any way. However, further explanation of the unconscious mind and of amnesia and posthypnotic suggestions induced him to recover his vision in the trance state. He was shown the writer's bookplate and instructed to memorize it thoroughly. This done, he was to awaken, again blind, and with no conscious knowledge of having seen the bookplate. Nevertheless, he would, upon a posthypnotic cue, describe it adequately to his own bewilderment. As soon as he understood, he was awakened and a desultory conversation was begun. This he interrupted upon the posthypnotic signal to give a full description of the bookplate. He was tremendously puzzled by this since he knew he had never

seen it. Confirmation of his description by others served to give him a great but mystified confidence in the therapeutic situation.

Upon rehypnosis he expressed complete satisfaction with what had been done and a full willingness to cooperate in every way. Asked if this meant he would confide fully in the writer, he hesitated, and then determinedly declared that it did.

Special inquiry among his fellow workers on the previous day had disclosed him to have a special interest in a redhaired, female employee.

By gentle degrees, the question of this interest was raised. After some hesitation, he finally gave a full account. Asked what his wife would think of it, he defensively asserted that she was no better than he, and he asked that the matter be kept in confidence.

Immediately, the questioning was shifted to a description of the street corner. He described it slowly and carefully but left mention of the gas station to the last. In a fragmentary fashion he described this, finally mentioning his suspicions about his wife and the redhaired attendant.

He was asked if his suspicions began at the time of his own interest in the redhaired girl and what did he think he wanted to do about the entire situation.

Thoughtfully, he declared that, whatever had happened, they were both equally guilty, especially since neither had endeavored to establish a community of interests.

Inquiry was then made about his wishes concerning his vision. He expressed fear of recovering it immediately. He asked if the "horrible, bright redness" could be made less glaring, with now and then brief flashes of vision which would become progressively more frequent and more prolonged until finally there was a full restoration. He was assured that everything would occur as he wished and a whole series of appropriate suggestions was given.

He was sent home on sick leave, but returned daily for hypnosis, accompanied by his wife. These interviews were limited to a reinforcement of the therapeutic suggestions of slow, progressive, visual improvement. About a week later he reported that his vision was sufficiently improved to permit a return to work.

About six months later he returned to state that he and his wife had reached an amicable agreement for a divorce. She was leaving for her home state and he had no immediate plans for the future. His interest in the redhaired girl had vanished. He continued at his work uneventfully for another two years and then sought employment elsewhere.

Comment

The procedure with these two patients was essentially the same. The underlying causation was not therapeutically considered. Patient E's intellectual limitations precluded this and Patient F had demonstrated the violence of his unwillingness to face his problem. Hence for both, an amelioration of the overwhelming symptom formation was effected. By a process of alternating increments and decrements a control of E's symptom complex was effected.

For Patient F, the reduction of the blinding redness, permission to remain blind and yet to have progressively more frequent and clearer flashes of vision was a parallel procedure.

As a consequence of the amelioration of their symptoms both patients were enabled to make their own personal adjustments.

Corrective Emotional Response

The following case histories concern intensely emotional problems. Therapy was achieved in one case by a deliberate correction of immediate emotional responses without rejecting them and the utilization of time to palliate and to force a correction of the problem by the intensity of the emotional reaction to its definition.

For the second patient, the procedure was the deliberate development, at a near conscious level, of an immediately stronger emotion in a situation compelling an emotional response corrective, in turn, upon the actual problem.

Patient G

An attractive social service student at the hospital entered the writer's office one evening without an appointment. She was clad in scanty shorts and a halter and she sprawled out in the arm chair, declaring, "I want something." Reply was made, "Obviously so, or you would not be in a psychiatrist's office." Coquettishly she expressed doubt about wanting psychotherapy and was informed that an actual desire was necessary for therapeutic results.

After some silent thinking she declared that she needed and wanted psychotherapy, that she would state her problem and then the writer could decide if he were willing to have her as a patient. She expressed the belief, however, that upon hearing her problem, she would probably be ejected from the office.

Thereupon she plunged into her story: "I have a prostitution complex – for the past three years – I want to go to bed with every man I see – most of them are willing – it doesn't make any difference what they are or who they are, drunk or sober, old or young, dirty or clean, any race, anything that can look like a man. I take them singly, in groups, any time, any place. I'm disgusting, filthy, horrible. But I've got to keep on doing it and I want to stop. Can you help me or should I go?"

She was asked if she could control her activities until the next session. Her reply was, "If you'll take me as a patient, I won't do anything tonight. But I will have to give you a new promise in the morning and another at night and keep that up every day until I'm over it."

She was told that she could have the next three days to test her sincerity, and for those three days she reported twice daily at the office to renew her promises. This promise renewal became a routine for her.

During a three-hour session on the fourth day, the patient devoted herself to an intense, verbal self-flagellation by recounting in full detail first one and then another of her experiences. With extreme difficulty she was induced to give such facts as her full name, birthdate, home address, etc. Only by constant interruption of her accounts was it possible to secure the following limited additional history:

Her mother was a "shallow-minded social climber, a complete snob, who is peaches and cream to those she thinks useful and a back-biting cat to everybody else. She rules my father and me by shrill shrieking. I hate her."

Her father was a "big business man, a nice guy with plenty of money, means well, I love him, but he's nothing but a dirty, stinking grease-spot under my mother's thumb. I'd like to make a man out of him so he'd slap her down."

Both parents taught her to "hate sex, it's nasty they say, and they haven't ever to my knowledge slept in the same bedroom. I'm the only child. I hate sex and it should be beautiful."

With that she launched into a continuance of her verbal self-flagellation for the rest of the session.

The next three-hour session was equally futile. She devoted herself, despite numerous attempts at interruption, to a bitter, morbid, repetitious account of her experiences.

At the following session, as she entered the office, she was told emphatically, "Sit down, shut up, and don't you dare to open your mouth!"

Peremptorily she was told that the writer would thenceforth take charge of all interviews, that no more time would be wasted, that the course of therapy would be dictated completely by the writer, and that she was to express her agreement by nodding her head and keeping her mouth shut. This she did.

Thereupon, with little effort, a deep, somnambulistic trance was induced and she was told that thenceforth she would have an amnesia for trance experiences unless otherwise indicated by the writer.

However, despite the trance state, she was found to be no more accessible than in the waking state with one exception. She did not speak unless so instructed, but when she did talk it was exclusively on the subject of her affairs. No more history could be obtained.

Efforts to circumvent her compulsive narration by disorientation, crystal gazing, automatic writing, and depersonalization resulted only in more specific, detailed accounts.

At the next session, in a deep, somnambulistic trance, she was instructed emphatically:

"We both want to know why you are so promiscuous. We both want to know the cause of your behavior. *We both know that that knowledge is in your unconscious mind.*

For the next two hours you will sit quietly here, thinking of nothing, doing nothing, just knowing that your unconscious is going to tell you and me the reason for your behavior.

It will tell the reason clearly, understandably, but neither you nor I will understand until the right time comes, and not until then.

You don't know how your unconscious will tell. I won't know what it tells until after you do, but I will have the reason, and at the right time, in the right way, you will know and I will know. Then you will be all right."

At the end of two hours, she was told that the time had come for her unconscious to tell the reason. Before she had time to get frightened, she was

handed a typewritten sheet of discarded manuscript. (See Appendix for discussion of this kind of technique.) She was then told:

"Look at this—it's a typewritten page—words, syllables, letters. Don't read it – just look at it. The reason is there – all the letters of the alphabet are there and they spell the reason. You can't see it – I can't see it. In a minute I'm going to lock that sheet up in my desk with the reason unread. When the time comes, you can read it, but not until then.

Now put the sheet face up on the desk, take this pencil, and in a random fashion, in a scrambled fashion, *underline those letters, syllables, words that tell the reason – quickly.*"

In a puzzled manner, she rapidly made nine scattered underlinings while the writer, on another sheet, made a numerical notation of the relative positions of the underlinings.

Immediately the sheet was taken from her and locked up face down in a desk drawer.

Then she was told, "Only one thing remains to be done. That is to decide the time when the reason is to be fully known. Come back and tell me tomorrow. Now wake up."

Upon awakening, she was given an appointment for the next day and dismissed. She took her departure without giving her usual promise.

The next morning she again failed to appear to give her promise. However, she kept her late afternoon appointment, explaining, "I almost didn't come because I have only two silly words to say. I don't even know if I'll keep any more appointments with you. Well, anyway, I'll say the two words – I'll feel better – 'Three weeks.' "

The reply was made, "According to the calendar, that would be 4:00 o'clock, August the 15th." She answered, "I don't know."

Thereupon, using a post-hypnotic cue, a deep trance was induced. She was asked if she had anything to say. She nodded her head. Told to say it, she uttered, "Three weeks, August 15th, 4:00 o'clock."

She was awakened and asked when she wanted another appointment. Her reply was that she would like to discuss her plans for the coming year and a possible thesis she might write.

For the next three weeks she was irregularly seen for discussion of her scholastic plans and extra-curricular reading. There was no discussion of her problem nor were there any more promises.

During that three weeks she attended a party where a personable young man, newly arrived at the hospital and an advisee of the writer, attempted to seduce her. She laughed at him and gave him the choice of informing the writer of his misbehavior or having her relate it and she succeeded in so intimidating him that he confessed.

At 4:00 p.m., August 15th, she entered the office, remarking, "It's 4 o'clock, August the 15th. I don't know why I'm here, but I had a strong feeling that I had to come. I wanted to and I didn't want to. There is something awfully scary about coming. I wish I didn't have to."

She was answered by, "You first came to me for therapy. Apparently you drifted away. Maybe so, maybe not. Our sessions were usually three hours

long. I used hypnosis. Shall I hypnotize you or can you finish therapy in the waking state? Just remember both your conscious and your unconscious mind are present. If you want to go to sleep, you can. But at all events, sit down in that chair, be quiet, and at the end of an hour, you name a time by saying, 'I'll be ready at .....' and give a specific time."

Uncomprehendingly she sat down and waited awake. At 5:00 o'clock she remarked, "I'll be ready at 6:30," and continued to wait quietly in a puzzled fashion.

At 6:30 the desk drawer was unlocked and the sheet of paper handed to her.

She turned it over and around in a puzzled fashion, scrutinized the underlinings, suddenly paled, became rigid, gave voice to an inarticulate cry, and burst into choking, shuddering sobs, gasping repeatedly, "That's what I tried to do."

Finally, in better control of herself, she said, "The reason is here—read it."

The underlined material read:

i wa nt to f uc K f author*

*The actual numerical order of the underlining was:

1. to
2. I
3. nt
4. wa
5. uc
6. f
7. K
8. f
9. author, with a line joining 8 and 9.

She explained, "It was any man, every man, all the men in the world. That would include father. That would make him a man, not a grease spot under my mother's thumb. Now I know what I have been trying to do and I don't have to any more. How horrible!"

She reacted by further intense sobbing but finally declared, "That's all in the past now. What can I do?"

The suggestion was offered that she undergo a complete physical examination to check the possibility of venereal disease. To this she agreed.

She completed her next year's training successfully and was not heard from until several years later. Then it was learned from a colleague that she was most happily married and is the mother of three children. Subsequent personal inquiry confirmed the happiness of her marriage.

Comment

The entire management of this case was essentially that of a strong dictatorial father with a "bad" child. Her initial emotional attacks upon the writer were immediately corrected by a careful choice of words but without a nullification of her emotions.

Her contempt for her father was corrected by the acceptance of her

identification of the writer as a father-surrogate and the utilization of absolute dictatorial authority over her and essentially forcibly continuing it.

The tremendously strong and compelling emotions deriving from her problem were corrected by the emotions of the waiting period which culminated in the distressing, painful emotionality of the final session.

Patient H

A young man, normally weighing 170 pounds, married a voluptuously beautiful girl and his friends made many ribald jests about his impending loss of weight.

About nine months later he sought psychiatric advice from the writer because of two problems. One was that he no longer could tolerate his fellow workers jesting about his weight loss of over 40 pounds. More hesitantly he added that the real problem was something else entirely. In fact, it was the failure to consummate the marriage.

He explained that his wife promised each night to permit consummation, but at his first move she would develop a severe panic and would fearfully and piteously persuade him to wait until the morrow. Each night he would sleep restlessly, feeling intensely desirous and hopelessly frustrated. Recently, he had become greatly frightened by his failure to have an erection despite his increased sexual hunger.

He asked if there could be any help for either himself or his wife. He was reassured and appointment was made for his wife. He was asked to tell his wife the reason for the consultation and to ask her to be prepared to discuss her sexual development since puberty.

They arrived promptly for an evening appointment and he was dismissed from the room. She told her story freely though with much embarrassment. She explained her behavior as the result of an uncontrollable, overpowering terror which she vaguely related to moral and religious teachings. Concerning her sexual history, she exhibited a notebook in which the date and hour of onset of every menstrual period had been recorded neatly.

Examination of this amazing record disclosed that, for ten years, she had menstruated every thirty-three days, and that the onset was almost invariably around 10 or 11 a.m. There were a few periods not on the scheduled date. None of these was early. Instead, there were occasional delayed periods, recorded by actual date and with the scheduled date marked by an explanatory note such as, "Been sick in bed with bad cold." It was noted that her next period was not due for seventeen days.

When asked if she wanted help in her marital problem, she first declared that she did. Immediately, however, she became tremendously frightened, and sobbingly and with much trembling begged the writer to let her "wait until tomorrow."

She was finally quieted by the repeated assurance that she would have to make her own decision.

As the next measure, she was given a long, vague, general discourse upon marital relations, interspersed more and more frequently with suggestions of fatigue, disinterestedness and sleepiness until a fairly good trance state had been induced.

Then, accompanied by emphatic commands to insure continuance of the trance, a whole series of suggestions were given insistently and with increasing intensity. These were to the effect that she might, even probably would, surprise herself by losing forever her fear, by suddenly, unexpectedly, keeping her promise of tomorrow sooner than she thought. Also, that all the way home she would be completely absorbed with a satisfying but meaningless thought that she would make things happen too fast for even a thought of fear.

Her husband was seen separately and assured of a successful outcome for the night.

The next morning he reported ruefully that, halfway home, seventeen days too early, her menstrual period began. He was relieved and comforted by the specious statement that this signified the intensity of her desire and her absolute intention to consummate the marriage. He was given another appointment for her when her period was over.

She was seen again on a Saturday evening. Again a trance was induced. This time the explanation was given her that a consummation must occur, and that the writer felt that it should occur within the next ten days. Furthermore, she herself should decide when. She was told that it could be on that Saturday night or Sunday *although the writer preferred Friday night;* or it could be on Monday or Tuesday night, *although Friday was the preferred night;* then again, it could be Thursday night *but the writer definitely preferred Friday.* This listing of all the days of the week with emphasis about the writer's preference for Friday was systematically repeated until she began to show marked annoyance.

She was awakened and the same statements were made. Her facial expression was one of intense dislike at each mention of the writer's preference.

The husband was seen separately and told to make no advances, to be passive in his behavior, but to hold himself in readiness to respond, and that a successful outcome was certain.

The following Friday he reported, "She told me to tell you what happened last night. It happened so quick I never had a chance. She practically raped me. And she woke me up before midnight to do it again. Then this morning she was laughing and when I asked her why, she told me to tell you that it wasn't Friday. I told her it was Friday and she just laughed and said you would understand that it wasn't Friday." No explanation was given to him.

The subsequent outcome was a continued, happy marital adjustment, the purchase of a home, and the birth of three wanted children at two-year intervals.

Comment

The psychosomatic response of a seventeen-day, early menstrual period in a woman so sexually rigid is a remarkable illustration of the intensity and effectiveness with which the body can provide defenses for psychological reasons.

The rationale of the ten-day period, the naming of the days of the week, and the emphasis upon the writer's preference may be recognized easily. Ten days was a sufficiently long period in which to make her decision and this length of time was, in effect, reduced to seven days by naming them.

The emphasis upon the writer's preference posed a most compelling, unpleasant, emotional problem. Since all the days of the week had been named, the passage of each day brought her closer and closer to the unacceptable day of the writer's preference. Hence, on Thursday, only that day and Friday remained. Saturday, Sunday, Monday, Tuesday and Wednesday had all been rejected. Therefore, consummation had to occur either on Thursday as her choice or on Friday as the writer's choice.

The procedure employed in the first interview was obviously wrong, but fortunately it was beautifully utilized by the patient to continue her neurotic behavior and to punish and to frustrate the writer for his incompetence.

The second interview was more fortunate. A dilemma she could not recognize of two alternatives was created for her – the day of her choice or of the writer's preference. The repeated emphasis upon the latter had evoked a strong, emotional response, corrective in effect upon her emotional problems. The immediate need to punish the writer and to frustrate his preference transcended her other emotional problem. The consummation effected, she could then taunt the writer with the declaration that last night was not Friday, happily secure that he would understand.

In brief, the resolution of this emotional problem, substantiated by the therapeutic results, was integral to and contingent upon an emotional response of corrective effect.

General Comments

Essentially the purpose of psychotherapy should be the helping of the patient in that fashion most adequate, available and acceptable. In rendering the patient aid, there should be full respect for and utilization of whatever the patient presents. Emphasis should be placed more upon what the patient does in the present and will do in the future than upon a mere understanding of why some long past event occurred. The *sine qua non* of psychotherapy should be the present and the future adjustment of the patient with only that amount of attention to the past necessary to prevent a continuance or a recurrence of past maladjustments.

Why Patient H refused to permit a consummation of the marriage is of interest only to others, not to her – she is too happy with her children, her marriage and her home to give even a passing, backward glance at the possible causation of her behavior. To assume that that original maladjustment must necessarily come forth again in some disturbing form is essentially to assume that good learnings have neither intrinsic weight nor enduring qualities but that the only persisting forces in life are the errors.

As an analogy, whatever may be the psychogenic causation and motivation of arithmetical errors in grade school, an ignorance thereof does not necessarily preclude mathematical proficiency in college. And if mathematical ineptitude does persist, who shall say that a potential concert violinist must properly understand the basic reasons for his difficulties in the extrapolation of logarithms before entering upon his musical career?

In other words, in this writer's opinion, as illustrated by the above case histories, the purposes and procedures of psychotherapy should involve the acceptance of what the patient represents and presents. These should be utilized in such a fashion that the patient is given an impetus and a momen-

tum, making the present and the future become absorbing, constructive and satisfying.

As for the patient's past, it is essential that the therapist understand it as fully as possible but without demanding or compelling the patient to achieve the same degree of special erudition. It is out of the therapist's understandings of the patient's past that better and more adequate ways are derived to help the patient to live in his future. In this way the patient does not become isolated as a neurosis of long duration to be dissected bit by bit, but can be recognized as a living, sentient human being with a present and a future as well as a past.

Appendix

There are many variations of the technique used in the case of Patient G, and in the writer's experience they are all often useful, especially in expediting therapy. They are employed by impressing most carefully and emphatically upon the patient the idea that his unconscious mind can and will communicate highly important, even inaccessible, information central to his problem but not necessarily in an immediately recognizable form. Then, as a result of some concrete or tangible performance, the patient develops a profound feeling that the repressive barriers have been broken, that the resistances have been overcome, that the communication is actually understandable and that its meaning can no longer be kept at a symbolic level.

Essentially, the procedure is a direct clinical utilization of projective test methodology with the patient's performance committing him decisively to a direct, relatively immediate understanding.

The task need not be deliberately assigned. The patient may be asked to do some apparently meaningless thing of his choice, or told, as in the above case history, to execute some definite performance.

Examples of some of the variations which have been employed by the writer are:

1. The "random" selection from a shelf of a book or books and thereby unwittingly designating a meaningful title.

2. The checking of dates on a calendar – in one instance a highly important, "forgotten" street address; in another, the age at which a strongly repressed traumatic experience occurred.

3. The spontaneous offer to "count the people in that cartoon" with an oversight of one of the children in it – secret doubts about the paternity of one of her own children.

4. The writing of a series of casual sentences with a misspelled word, a misplaced word or varied spacing of words in one or more sentences.

5. The writing of a "silly" question – seeking instruction preparatory for marriage to George, she wrote, "Will I marry Harold?" who was known to her only as a casual acquaintance of a friend. She actually married a man named Harry.

6. Scrawling at random on paper, shading a line here and there and subsequently "finding the lines that make a picture."

7. Drawing a series of related or unrelated pictures, smudging or crossing out one or more partially or completely – the people on the street, with the old lady thoroughly smudged and his recognition of his mother-hostility.

8. The writing of a deliberately false, descriptive account of some casual event – 15 people at that party had untidy, straight black hair and unduly long noses.

9. Writing a list of casual words and "underlining one or more which would be or should be difficult or impossible to talk about" – the list was one of various items observed while walking down the street with the one word "flowers" repetitiously included but not underlined – his repressed fears of being a latent "pansy."

10. Tearing out an uninteresting advertisement from some magazine and bringing it to the next session – a picture of doughnuts and his sudden realization of the extent of his loss of interest in his wife.

11. Picking up and handing over something, just anything – in one instance a pencil stub: phallic inferiority; in another, a burned match: fear of beginning impotence.

12. Glancing briefly at each page in a newspaper. When this has been done, the additional instruction of, "Give a page number quickly" – the alimony story and secret fears about the marital situation.

13. "When you get up and move your chair to the other side of that table your unconscious mind will then release a lot of important information. Perhaps it will take your unconscious even longer than five or ten minutes to do it, or perhaps it will not be until the next session" – ten years ago giving mother one-half hour early her four-hour dose of tonic and mother's cardiac death five minutes later.

14. Writing to a dutifully loved father a letter filled with unreasonable complaints and hostility and handing it over to be read – an immediate, severe, psychogenic asthmatic attack.

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The Effects of Psychological Stress as Measured By a Decrease in the Number of Circulating Eosinophiles

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This is a continuation of the study reported by Sternberg and Zimmerman (3.). They compared the eosinophile response of 22 non-diseased control subjects and 27 atopic dermatitis patients under three conditions: (a) no stress, (b) .01 mg. of epinephrine per kilogram of body weight administered subcutaneously, (c) one hour in a room at 100 to 115 degrees F. and humidity at 85 to 90%. The changes in the eosinophile count were quite variable in both groups of subjects, under all three conditions. However, in one condition (hot room), the controls displayed a mean decrease of circulating eosinophiles of 48.4%, whereas the atopic patients had a mean decrease of only 3%. This difference was found to be significant beyond the .001 level of confidence. The differences between the groups on the other two conditions were not signficant.

It was inferred that patients with atopic dermatitis have a properly functioning pituitary-adrenocortical mechanism since they responded in the same manner to exogenous epinephrine as the control subjects. The lack of response to the hot room which these patients have shown was postulated to be the result of a defect in the hypothalamus, higher brain centers, or the adrenal medulla. Since the hot room is a highly specific stress which stimulates sweating, and since most dermatitic patients do not appear to have an efficient sweat response, it was felt that the skin itself could be a possible source of fault. It seemed advisable to continue studies in other stress situations where involvement of the skin would not be an important variable. Psychological stresses were chosen in order to study the effect of non-physical stimuli on the eosinophile count. In the literature there are many references to the influence of emotional factors on the pituitary-adrenocortical axis, but most studies have concentrated on drug stimulation or other types of physical stress.

Materials and Methods

Testing Technique: Subjects were instructed to fast beginning at 11 p.m. of the preceding night until the tests were completed the following day. At 8 a.m., blood samples were obtained from the ear lobe and counted as soon as possible for eosinophile leucocytes in Levy counting chambers, 0.2 mm in depth. At least two pipettes and four chambers were counted and averaged. A second count was taken 4 hours later.

Number and Type of Subjects: The study can be divided into two parts, the first consisting of a series of three hypnotic conditions, the second consisting of one control and two stress conditions. Eight healthy control subjects with no history of allergic disorders of any type were run through the first series. These same controls plus a few new subjects were included in the second part. It was the intention of the investigators to study at least a comparable number of patients with atopic dermatitis and analyze differences between them and the controls. Unfortunately, a great deal of difficulty was encountered in setting up the experiment, and the personnel necessary to carry on the project were not available long enough to complete it. As it was, we were able to test 6 patients with atopic dermatitis before and after one of the hypnotic conditions, and 4 other atopics were measured before and after one type of external stress. Incomplete as our samples are, we felt that it would be of interest to present our results.

Procedure: In variable order and on different days spaced at least one week apart, the experimental subjects were exposed to the following conditions shortly after 8 a.m. eosinophile counts were determined. At noon new blood samples were obtained and counted.

1. *Hypnosis, no suggestion:* Dr. Roy M. Dorcus applied the hypnotic techniques. In this part of the series, a state of relaxation was induced, but no suggestions were given. Most subjects rested quietly all morning.

2. *Hypnosis, suggested personal stress:* Before being hypnotized, each subject was asked to recall an experience which he remembered as being very traumatic. Later, under hypnosis, it was suggested to the subject that he would "relive" or re-experience the traumatic event.

3. *Hypnosis, suggested hot room:* The subjects had been exposed to the hot room stress reported previously (3), and all concurred that it was most unpleasant. Under hypnosis, it was suggested that they were again in the hot room.

4. *Control run:* No intervening stimulus was applied. Subjects were instructed to relax as much as possible.

5. *Stress, bitter tonic:* Subjects were given ½ ounce of an extremely bitter solution every 15 minutes for a period of one hour. They were instructed to roll the solution around in their mouths for one minute, then spit it out. The tonic was only mildly irritating to the membranes of the oral cavity.

5. *Stress, simulated murder:* Dr. Murray C. Zimmerman used considerable ingenuity in setting up a "murder" which was quite realistic. After morning counts had been taken on four or five subjects, while they were still in the testing room relaxing, an irate "patient," who in reality was a professional actor, entered the room. The "patient" accused Dr. Zimmerman of being responsible for cutting off his pension. An argument ensued in which the "patient" became louder and more flushed with "anger." He climaxed the event by pulling out a blank cartridge pistol, "shooting" the physician, who was some 5 or 6 feet in front of him, and fleeing from the room. As the physician slumped over a table, he added a touch of realism by surreptitiously cutting open a rubber bag containing 20 cc's of his own blood which had been hidden beneath his tunic.

To avoid an undue amount of muscular activity which, in itself, could

lower the eosinophile count, subjects were instructed to remain in their seats by an assistant who then left the room to get medical aid and to notify the police. In a few minutes the assistant returned with a policeman and a physician. Shortly after, the subjects were informed that the entire scene had been staged.

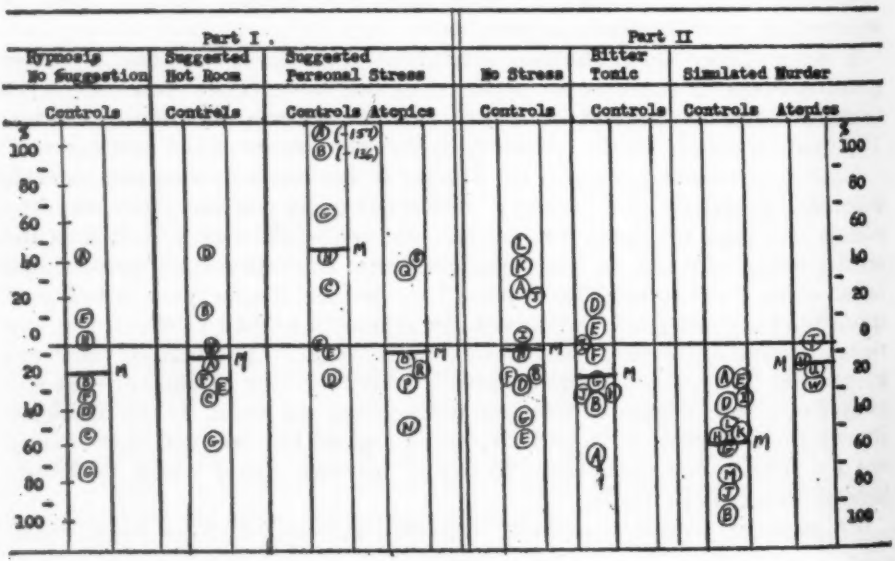
Results

Table I shows the percentage drop in eosinophiles between 8 a.m. and noon counts on all subjects under all conditions. Chart I illustrates the individual responses.

Table I: % drop in eosinophiles between 8:00 a. m. and noon counts

Parts	Experimental Conditions	"Normal" Controls			Atopic Patients		
		N	Range	Mean	N	Range	Mean
	4. Hypnosis, no suggestion	8	−42 to +73	21.1	0	—	—
I	5. Hypnosis, suggested personal stress	8	−157 to +29	−48.6	6	−39 to +50	6.8
	6. Hypnosis, suggested hot room	8	−45 to +58	12.8	0	—	—
	1. Control run	11	−50 to +56	3.8	0	—	—
II	2. Stress, bitter tonic	9	−12 to +69	20.8	0	—	—
	3. Stress, simulated murder	11	+25 to +95	54.6	4	0 to +20	15.8

Chart I — Eosinophile response in terms of per cent change from an 8 a. m. level. M = mean; A, B, etc. = scores of specific individuals.



An analysis of variance (1) on part I indicated an over-all, significant difference between the means of the three hypnotic conditions which was greater than the .05 but less than the .01 level of confidence.

When we examine the raw data, we find that the average count for 8 control subjects on the morning before suggested "personal stress" was 35.13. Such a low average count could be expected to rise by noon, whether a stress condition intervened or not. It is felt, therefore, that the mean increase in eosinophiles of 48.6% for this group could not be the result of the experimental condition. If the suggested "personal stress" measures are removed from the analysis, or if the data are analyzed in terms of the order of presentation of the three conditions, we find a tendency for hypnosis to lower the eosinophile count, regardless of the specific suggestions given. This tendency might attain a level of statistical significance if a greater number of subjects were studied or if there were some objective and valid criteria for separating subjects who were deeply hypnotized from those who were not.

An analysis of variance on Part II shows a difference between the three conditions which is well beyond the .01 level of confidence. The "t" ratio[1] between the means of the control run and simulated murder is significant beyond the .001 level, between simulated murder and bitter tonic beyond the .01 level. Between the control run and bitter tonic, the "t" ratio was insignificant. The differences between the three conditions seem to be due mainly to the psychological stress which was induced by the simulated murder. The four atopic patients showed some tendency to react like the controls in this situation, but the experimental group was too small for significance to be demonstrated.

Discussion

If the atopics in this study represent the kind of eosinophile reaction which would be found in the group as a whole, then we could say that they do respond over the pituitary-adrenocortical axis to external psychological stimulation, but they do it to a much lesser degree than normal controls. Because of the small number of atopics studied, such a statement is little more than conjecture. These results do, however, emphasize the need of continued investigation of dermatitic patients with non-physical types of stress.

In terms of external behavior, some rather interesting differences were observed betwen the 4 atopics and 11 "normals" who were exposed to the simulated murder. The normals as a group were obviously upset. One stated that he felt like jumping under a table and another turned white with fear. Although two were sure the "murder" was faked, they could not convince the majority who anxiously demanded that the assistant tell them whether it was staged or not. Most of the "normal" group made some effort to help. One subject, who was only a few feet away from the "madman" who was brandishing his pistol and very much within the latter's line of

[1] A critical ratio technique to be used on samples under 30. It takes into account the fact that distributions of small samples are not typically normal. Greater differences between means must obtain for small samples to reach the same level of statistical significance as large samples.

vision, managed to sneak out a door and return in a short while with a policeman.

The reaction within the dermatitic group was quite different. One patient who had had rather extensive psychiatric treatment offered to help, but the other three showed an almost complete lack of concern. As the physician was slumped over a table, obviously "dying," they sat and made jokes. The patients were interrogated about their feelings later, and the consensus was that they believed the physician had been shot, but it didn't mean anything to them. The patient who had psychiatric treatment remarked that he did not feel upset at the moment, but he knew he would have a difficult time with his skin later in the day.

Some of the difference in the concern of the two groups might be accounted for by the fact that most of the "normals" knew the physician and the patients did not. However, it would seem that the lack of reaction of the patients was too extreme to be so simply explained. Although results based on so few cases cannot prove that patients with atopic dermatitis generally respond in an inappropriate fashion to psychological stress, they do tend to emphasize the importance of making observations at a number of levels if a more complete understanding of the disorder is to be gained.

The main finding of the present investigation is that psychological stress can produce an end result in the eosinophile count of "normal" subjects which is comparable to other types of stress such as exposure to a hot room or the injection of epinephrine. The general concept that various types of stimulation may produce somewhat the same changes in the organism is certainly not a new one, but a larger body of empirical data will help us make such a concept more specific and more useful.

It is interesting to note that only the simulated murder led to a clearly significant decrease in circulating eosinophiles. Other, less intense, psychological stimuli might also produce significant changes if we were to study a larger number of people and/or if we were to include other measures of stress which are not so variable as the eosinophile count.

Dealing with group differences permits us to apply tests of statistical significance, but in doing so we may overlook the problem of individual variation. Of the 10 patients included in this study, 7 exhibited a decrease in eosinophiles after exposure to psychological stress. Though the decrease in many instances was not as marked as that of the control subjects, this is not to say that there was no response at all. In the hot room stress reported previously (3), the atopic group had a mean drop of only 3%, but over half the patients exceeded this mean, some showing decreases greater than 50%. These data do not support the contention that atopic patients *as a group* have some neurological defect which prevents a normal pituitary-adreno-cortical response to external stress. Certain individuals may be deficient in this respect, but it does not seem to be a characteristic which is common to all patients suffering from atopic dermatitis.

Summary and Conclusions

Eight healthy control subjects who had no history of allergic disorders were run through a series of experimental conditions which were inter-

posed between eosinophile counts taken at 8:00 a.m. and noon. In three of the situations a few additional "normal" controls were added. Six patients diagnosed as having atopic dermatitis were studied in one of the hypnotic conditions, viz., suggested "personal stress," and four other atopics were exposed to a simulated murder.

An analysis of the results indicated that "normals" had significant differences in their eosinophile counts before and after a control run and hypnosis. However, direct reference to the raw data revealed an abnormally low average count before one of the intervening stresses which then rose more than 48% on the entire group by noon. The increase, which could hardly have been due to the experimental situation, created such a difference between the means of the hypnotic conditions, that a spurious significance level of greater than .05 but less than .01 was obtained. When the effects of this rather aberrant result were cancelled, we found that hypnosis, regardless of the specific suggestions employed, had some tendency to lower the eosinophile count. The trend was not great enough to be statistically significant.

"Normals" also displayed a significant drop in eosinophiles in the other experimental situations which was most directly a function of their reaction to simulated murder. The dermatitic patients did not show significant differences in the two psychological stresses where they were studied. There did seem to be a tendency for them to respond in the same direction as the normals, but with less magnitude. Since some atopics did show an eosinophile response to external stress in this study and in another reported previously (3), it is concluded that a defect in the hypothalamus, higher brain centers, or the adrenal medulla could not be characteristic of all dermatitic patients. The behavior of the patient and control groups in the simulated murder condition was discussed.

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Dehypnotization and Associated Words[1]

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The word association test was first studied in Psychology by Wundt. Later, Jung and Bleuler discovered a certain relation between the words used as stimulus and the corresponding responses and employed this finding in the investigation of conflicts. They asserted that a certain stimulus-word, could evoke, directly or indirectly, a conflict or complex and thus modify the result of the test. Freud (1) pointed out several signs which may be useful in discovering whether a stimulus-word is effective for unmasking a conflict; in his exposition he refers to investigations conducted among subjects on trial, who naturally tried to avoid confession of their guilt. These signs are the following: 1) nature of the response-word different from a usual range of answers; 2) faulty reproduction; that is to say, different response-words when the test is repeated on different occasions; 3) long periods of latency before giving the response; and 4) persistance of the longer period of latency when the particular stimulus-word is repeated, and modification of the reactions to the subsequent non-critical words. When all or several of these signs are present, this would prove that the conflict or complex exists.

In this paper we are reporting an investigation aiming to verify the correctness of these assertions by employing the dehypnotization technique in a clinical case. By dehypnotization we mean the awakening of a subject from a deep trance in obedience to a previous order. It is known that no subject in a deep somnambulic trance awakens spontaneously from it unless a relatively long period of time has elapsed. A direct intervention of the hypnotist is necessary for a hypnotized subject to awaken from a somnambulic state, either by ordering him to open his eyes and awaken, or indirectly, for example, by telling him to count mentally until ten and that by then he will awaken. If we observe closely, in the latter instance we have conditioned the dehypnotization to the carrying out of a previous order. It was logical, therefore, to think that a previous order to dehypnotize (which we shall later describe) could be employed for purposes of clinical investigation. This phenomenon of dehypnotization presents the advantage of being very easy to ascertain objectively. Furthermore, all the physiological differences between hypnosis and wakefulness may be easily detected.

Material and Methods

The present investigation was conducted on a 46-year-old patient who entered our clinic for psychiatric examination after successive fraudulent financial operations using fundless checks. From his personal history, a fact worth pointing out is that his wife had left him several years ago. This he related to the physician, in a state of deep emotion, only after a long

[1]I wish to express my thanks to Professor I. Matte for helpful criticism.

period of contact. Making use of these facts, a set of stimulus-words was presented to the patient, which included, among neutral words, others which were related to those incidents we considered most important and difficult of the patient's history.

The tests applied during wakefulness always took place privately; one of the tests under hypnosis (May 19th, 1952), was conducted in the presence of the Clinic staff.

The results of the tests held during wakefulness are presented in Table I.

Table 1

WORD ASSOCIATION TEST

Stimulus-words.	Response-Words							
Date of Experiment.	April 30/52.	T.[2]	May 5/52.	T.	May 14/52.	T.	July 11/53.	T.
1. Hammer.	Saw.	1,4	Saw.	1,8	Saw.	1,2	Saw.	0,9
2. City.	Village.	2,9	Town.	4,6	Town.	2,2	Town.	1,6
3. Button.	Buttonhole.	1,8	Buttonhole.	1,5	Buttonhole.	1,5	Buttonhole.	1,4
4. Salt.	Sugar.	3	Sugar.	1,7	Sugar.	2,6	Water.	1,8
5. Tobacco.	Cigar.	3,4	Cigar.	1,3	Cigar.	1,3	Cigar.	1,4
6. Moon.	Sun.	1,6	Sun.	1,4	Sun.	1,5	Sun.	1
7. Lover.	Mistress.	3	Mistress.	1,4	Mistress.	1,9	Mistress.	2
8. Whiskey.	Pisco.[3]	2,3	Ginger-Ale.	3	Wine.	3,4	Soda.	1,1
9. Bible.	Scriptures.	2,1	Book.	2,8	Scriptures.	2	Testament.	3,1
10. Adulteress.	Prostitute.	6,3	Woman.	3,2	Woman.	2,5	Prostitute.	2,6
11. Difficulty.	Facility.	3,2	Easy.	2,4	Easy.	1,5	Difficult.	3
12. Stem.	Trunk.	1,6	Trunk.	1,5	Trunk.	2,2	Tree.	1,5
13. Wish.	To Want.	2,5	To Want.	2,2	To Want.	1,5	To Want.	1,8
14. House.	Chamber.	4	Chamber.	3,2	Chamber.	2,6	Chamber.	2,2
15. Thief.	Crook.	3,5	Bandit.	4,2	Criminal.	3,6	Crook.	3,2
16. Check.	Promissory-note.	2,5	Promissory-note.	2	Promissory-note.	1,6	Promissory-note.	3
17. Ocean.	Sea.	2	Sea.	0,8	Sea.	1	Sea.	1,4

[2]T., time in seconds.

[3]Pisco., strong drink similar to vodka, frequently drunk as "pisco-sour" instead of "whiskey-sour."

On the same morning when the first test was applied to the waking patient, he was hypnotized to a deep trance. In this state, he always presented several characteristic signs: ability to open the eyes without awakening; ample spontaneous anaesthesia; post-hypnotic amnesia, etc. He was given the following order: "I am going to show you some words. You are going to read them aloud. If any of them makes you remember something

disagreeable, you will wake up; you will not remember what I have said." A moment later the stimulus-words were handed to the subject, each written on a separate card. He carried out the order and read them aloud. He was sitting on a chair, completely still; the only part of his body that moved was his right arm which took the cards he was to read. The depth of the trance was controlled several times by verifying the anaesthesia, applying a test tube containing water at 90°C. to the instep of one foot. This was not done very often because the burns provoked by such applications hurt and bothered the patient when awake and also because his awakening seemed to be sufficient evidence. Upon waking up from the trance, he rubbed his eyes and relaxed very visibly in his armchair.

In all the dehypnotization tests with the stimulus-words shown in the adjunct Table and the already described previous order, he only awoke to the words: thief and check. Questioned after every dehypnotization, he said he did not remember what had happened during the trance. When he was asked: "Why do you think you woke up?", he replied, "You must have told me to wake up when I read the word 'thief' or 'check' in the corresponding instance." It must be added that this patient had been used on several occasions for demonstrations on hypnosis, during which the phenomenon of post-hypnotic orders had been studied. Upon being asked, after carrying out the post-hypnotic order, he always answered, "Probably I was told to do this while I was asleep."

In the second and third tests applied to the wakeful subject, the order of the stimulus-words was altered. The dehypnotization tests were conducted on different days. In the third dehypnotization experiment, the anaesthesia control was very strict, and the words were handed to the subject without the operator's knowledge of their sequence, so as to avoid any possible direct intervention. The fourth and last session of dehypnotization took place with the patient alone, more than a year after the preceding one, and several days after the last waking test.

Some days after this last session, with the patient in a deep trance and under the order to awaken upon reading anything disagreeable, he was given the response-words he gave to all the stimulus-words which, when awake, had produced more than one of the signs indicated by Freud for discovering critical words. The word "promissory-note" was included, which, even though it did not belong in the aforementioned group, was the answer to a dehypnotizing word. None of these words produced dehypnotization. Some days later, and under the same experimental conditions, he was given to read seven synonyms of the word "thief." Only one word, "swindler," produced dehypnotization.

Discussion

The most outstanding fact in this experiment is that, of the two words that produced dehypnotization according to the order given during the trance, only one, i.e. "thief," fulfilled the accepted requirements of conflict-provoking words. The word "check," during wakefulness was never shown

to be a critical word. This could be explained by the fact that in Spanish there are no synonyms for this word, or else that the signs accepted as indications of a conflict-provoking word are insufficient.

Some signs of conflict produced during wakefulness by stimulus-words which we considered neutral, may be due, not to their being conflictual, but to the fact that they were rather abstract, which may cause a delay in answering.

The idea of "thief" is only represented by the words "thief" and "swindler," and not by other synonyms frequently used in Spanish. From this, one might infer that the idea in itself provokes hardly any conflict, but that, on the other hand, certain specific emotionally toned words expressing this idea provoke the emotional reaction.

The dehypnotization method, together with associated words, may be useful in hypnotherapy. It might serve to control the success of treatment, inasmuch as a word which implied a conflict and dehypnotized a patient at the beginning of treatment will become neutral, that is to say, a not dehypnotizing word, after the conflict has been resolved.

The fact that the subject was dehypnotized by the word "swindler," even though he never gave it as a response during wakefulness, leads us to suggest that perhaps long periods of latency, as signs of conflict, might indicate reluctance or postponement of a response-word which might evoke the experience with the same effect as the stimulus-word.

Summary

On a good subject of hypnosis, dehypnotization was used as a new method to investigate the conflict-provoking quality of certain stimulus-words in an association word test.

The results and the possibilities of this method in psychopathology and hypnotherapy are discussed.

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The Use of Hypnosis in the Differential Diagnosis of a Speech Disorder

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Although there is considerable difference of opinion among the authorities in the field of speech correction about the etiology and treatment of stuttering, there is a rather general agreement about the usual development and characteristics of the disorder. These factors have been well defined and described by Johnson (2, 3) and Van Riper (15, 16). But in the twilight zone between normal speech and stuttering are many speech disturbances marked by repetitions, hesitancies, and tonic or clonic spasms but which do not evidence the other symptoms and developmental pattern characteristic of stuttering. For definitive purposes these speech disturbances may be termed *stuttering symptoms.*[1]

Often the speech therapist is called on to treat cases in which another speech disorder is complicated by stuttering or stuttering symptoms. He must, then, decide whether or not the stuttering is the primary problem. It is the purpose of this paper to discuss a case which presented such a problem and to show how hypnosis was used as an aid in differential diagnosis. Although infrequently mentioned in the literature, hypnosis is not a new technique in the field of speech correction. Hypnotherapy has long been recognized as one of the possible treatments for stuttering. Wolberg (14) has outlined a plan of therapy for stuttering and case studies have been presented by Bramwell (1), LeCron and Bordeaux (4), Livingood (5), Moore (8), Rosen (9), and Watkins (13). Salter (10) reports a case successfully treated by autohypnosis. In the case to be presented here, the speech block entirely disappeared during the course of hypnotherapy. But for reasons which will become evident later, the writer does not claim to have "cured" a case of stuttering by hypnosis.

Harry R. was referred to the writer by his classroom teacher who considered him to be a stutterer. "His speech is all mixed up," she added, "but I think it's mostly due to his stuttering. He probably substitutes words because of this difficulty."

At the time of his referral, Harry was 8.5 years old. His health and physical condition were definitely superior. His motor development, coordination, and strength were about equal to those of the average ten-year-old. A neurological examination revealed no traces of dysfunctioning.

Developmental History

After a nine months pregnancy, labor was relatively brief and easy. This was the first pregnancy and there has been none since. The mother was 23 years old at the time of Harry's birth and the father was 31. Both parents were in good health. The mother worked during the first six months of

[1] In a paper to be published soon, the writer will present a heuristic classification of stuttering as *basic* and *symptomatic* based on the etiology of the disorder instead of the observable manifestations.

pregnancy and returned to work when Harry was about five months old. For the first 15 months Harry's health and development were above average. By that time he had begun toddling around the house and according to the parents had a vocabulary of 20 to 25 words which were understandable.

At 15 months Harry had a rather severe case of measles followed by a long convalescent period complicated by several colds. During this six months illness, his speech regressed. He stopped talking and vocal play altogether except for an occasional word or sound.

His health since that time had been very good. There was no record of any other serious illness. He very rapidly regained his physical strength and was soon equal or superior to his peer group in motor development. His speech, however, was badly retarded and progress was very slow.

The home environment was not favorable for speech training. The mother worked and had little time to devote to the child. But becoming worried over his speech, she took him during his preschool years to two different physicians for physical examinations. She said they assured her that there were no physical or neural causes for his speech disorder and that "he would probably outgrow it when he went to school." The mother's aunt who kept house for the family also felt he would outgrow it so did little or nothing to train him. Because of his work, the father was home for only a few days at long intervals.

Psychological Examination

On the Stanford-Binet, Harry had an I.Q. score of 106, but his speech handicap made the validity doubtful. His score on the Draw-A-Man test was 112. At the time of his referral, Harry was in the third grade. His classroom teacher considered him to be average or above in all of his work except spelling and reading. With a little special tutoring and added home work he was overcoming these deficiencies. His social adjustment was excellent. He had a cheerful, out-going personality which made him a favorite both with adults and his peer group.

Speech and Hearing Examination

Harry was given a pure-tone audiometer test and the results showed normal hearing in both ears. Articulation tests with pictures, words, and simple sentences revealed scores of substitutions and omissions, together with faulty voicing and unvoicing of consonants. There was no apparent pattern or consistency in his substitutions. For example, he almost indiscriminately interchanged [m, b, p, f, and v] and often substituted [w] for any one of them. However, with care he could produce all of the speech sounds in isolation or with a single vowel with the exception of initial [s].

The testing was made difficult by his frequent blocking. The blocks were characterized by a deep inhalation followed by a tonic spasm of the speech and breathing musculatures. Some of the blocks would last as long as 10 to 15 seconds during which time he was rigidly immobile. Harry also complained of pain in the region of the lower ribs. The mother reported she had noticed some blocking starting about his fourth year. During his attendance in the first grade, the blocking or stuttering almost entirely disappeared and

he showed considerable improvement in his articulation. Soon after he began the second grade (about a year and a half before his referral) the blocking returned and rapidly became much worse. His articulation problem also became worse and he soon began to have difficulty even with the words which he had previously been pronouncing correctly.

The Problem

To organize a plan of treatment and to decide on a point of departure for therapy, it was necessary to make a preliminary diagnosis as early as possible. The problem for the therapist was to decide whether Harry's speech defect was primarily stuttering or an articulation disorder. That is, he must answer the question: Was the blocking true secondary stuttering?

Indications of secondary stuttering included: the severity and frequency of the blocks; a slight torticollic movement at the beginning of the spasm; the complete immobility and apparent mental blocking during the spasm; the possibility that the substitutions and omissions of sounds were in part release mechanisms.

There were also several contraindications for a diagnosis of stuttering. For example, Harry had no Jonah words, he made no attempt to avoid or substitute words, and he made no use of starting mechanisms. One of the most important contraindications from the writer's viewpoint was Harry's reaction to the frustrations of his speech disorder. He was primarily frustrated by his inability to communicate rather than by the speech block itself. Secondly, contrary to what might be expected in stutterers (6, 7), the resulting aggression was very high in an extropunitive and very low in an intropunitive direction.

Hypnodiagnosis

At the first meeting Harry was given practice in progressive relaxation using the "rag-doll" and "scarecrow" games. The results of suggestibility tests were almost entirely negative. Induction was attempted by the postural-sway technique and proved unsuccessful. At the second session, several other methods were tried. A brief, very light trance was induced by eye fixation, but could not be repeated.

During the third meeting, Harry related that he had attended the movies the night before and as usual had gone to sleep and missed most of the show. He said that he could never keep awake at a motion picture show. Using Salter's "feed-back" technique (11), the room was darkened, a flashlight spot was turned on the wall, Harry seated in an armchair and was told to imagine he was in a motion picture show. Using sleep suggestions, a medium trance was induced in about ten minutes. This was deepened by fractionation. A post-hypnotic suggestion was given that in the future the trance could be induced by counting.

At the next session, after a period of relaxation, a deep trance was induced in four minutes by eye fixation and counting. Articulation tests were given by aural stimulation.[2] Under hypnosis the blocking was entirely

[2]Templin's study (12) of the two methods of articulation testing – spontaneous vs repeated words – revealed practically no difference in the results obtained.

absent, but there were no significant changes in the articulation tests results. Before Harry was awakened, suggestions were given to relieve the tension and pain in the lower rib area.

As a check, at the next session another group of articulation tests were given by aural stimulation during the wakened state and the same and equivalent tests administered under hypnosis. Because of Harry's almost random substitutions and omissions, the results of the tests differed qualitatively, but quantitatively they were almost identical.

Therapy

It is not the purpose of this paper to discuss the therapy used in Harry's case except to indicate how the diagnosis influenced the plan of treatment. From the above tests and others given as the speech block lessened, it was evident that Harry's problem was primarily an articulation disorder. It was discovered that he was almost completely unable to hear his own errors at the time of production. Although he did not know how to correct his errors, he almost never failed to detect them when they were reproduced by the therapist or his speech played back to him on the tape recorder. His family, teachers, and others had been "helping" him by interrupting his speech and forcing him to correct his errors – errors which he could not hear and did not know how to correct! The cooperation of the parents and teacher was secured to relieve this environmental stress.

Hypnosis was induced at every session for the first four weeks and about once a week afterward. In the first period only an indirect attack was made on the blocking by suggestions which would relieve the muscular tension. Because Harry did not consider himself a stutterer, no direct mention of the blocks was made either in the wakened state or under hypnosis. During the latter period of therapy the trances were induced for two purposes: first, to aid relaxation when necessary; and secondly, for added concentration to speed up the learning process.

The spasms diminished rapidly both in frequency and severity from the start of the hypnotherapy. Within a period of three weeks (nine sessions) they had entirely disappeared. For a few weeks there were infrequent and brief non-tension hesitancies. These differed entirely from the former spasms in the absence of muscular rigidity. Secondly, they seldom lasted more than a second or two while Harry was experimenting with the speech mechanism preparatory to producing a sound. These, too, disappeared as the articulation defect was reduced.

Summary and Conclusions

The case of an eight-and-a-half-year-old boy has been presented to illustrate how hypnosis was used as an aid in the differential diagnosis of a speech defect which presented symptoms of both stuttering and an articulation disorder. The case was diagnosed as primarily an articulation defect. No direct attack was made on the speech blocks other than hypnotic suggestions to relieve tension and some environmental modifications. However, the tonic spasms entirely disappeared within a period of three weeks. This

remission plus the rapid strides made in the speech rehabilitation would indicate that the correct diagnosis had been made and as a result an effective plan of therapy instituted.

It is postulated that hypnosis can be a valuable technique in the diagnosis of speech cases presenting symptoms of several disorders, especially if one of them is stuttering. It is also suggested that hypnosis may be a valuable therapeutic method for treating many cases which present stuttering symptoms.

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An Experimental Study of the Nature of Hypnotic Deafness: Effects of Delayed Speech Feed-back[1]

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Introduction

The problem of hypnotically induced changes in audition or at least in auditory response behavior assumes in hypnotic research the same significance as do all studies of hypnotically induced phenomena which have non-hypnotic parallels with which to make comparisons. Comparative studies of hypnoanesthesia, hypnotic blindness and hypnotic paralysis, are of interest in that some means of validity of the hypnotic behavior has been presumed. With respect to experimental methodology, it seems rather debatable as to whether or not the direct comparison of a hypnotically induced alteration in behavior function with a non-hypnotic parallel physiological state is, in fact, a measure of the validity of the hypnotic state.

Rather it seems to be a measure of equation. It would seem that the definitive examination of the validity of hypnotic behavior lies not in its organic parallel or similarity with physiological phenomena but rather with its equivalence in relation to response behavior.

Thus the formula for considering the validity of hypnotic behavior is the ratio of response behavior between hypnotic stimuli and non-hypnotic stimuli. The nature of these ratios and the magnitude of variation alone can be considered measures of validity. Stimulus equivalence is still a term. It really cannot yet be said to exist within the framework of hypnotic research. Clinical experience suggests that effector reaction, or the meaning of the response to stimulation by the organism may assume equivalence. It is within this conceptual framework that we must evaluate the meaning of hypnotic behavior to the subject and this is, in fact, the core of hypnotic validity.

This report is concerned with the problem of hypnotically induced deafness with respect to its nature and consequently its validity. Validity not in organization but in effect upon the organism. Pertinent work in this area has been reported upon by Erickson (5, 6) in his two studies of hypnotic deafness. Utilizing both clinical and experimental approaches, Erickson came to the following conclusions: "The induction of a state of hypnotic deafness results in significant and extensive psychological and neurophysiological changes in auditory functioning comparable in degree and character with those arising from organic deafness".

Briefly stated the experimental findings upon which Erickson based these conclusions included:

1. Absence of startle reflexes.
2. Failure of habitual ingrained or voluntary patterns of behavior arising

[1]Read in part at the Fourth Annual Scientific Meeting of *The Society for Clinical and Experimental Hypnosis*, the New York Academy of Sciences, September 29, 1953.

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from auditory stimuli.

3. Complete limitation of response behavior to stimuli legitimate to the deaf state.

4. The loss of a conditioned response to auditory stimuli with the induction of hypnotic deafness.

Somewhat later Pattie (18), in an experimental study of hypnotic deafness and unilateral anesthesia, determined that in hypnotically induced deafness, auditory nerve stimulation takes place. This would cast some doubt on the authenticity of the changes in neurophysiological functioning which Erickson inferred from his study. It need not relate to the neuropsychological alterations observed in auditory response and behavior organization in association to audition.

Experimental Objectives

The specific purpose of this study has been two fold:

1. To determine in relation to hypnotically induced deafness, whether or not auditory nerve stimulation takes place on a level *significantly marked* to constitute hearing, and,

2. To determine whether or not hypnotically induced deafness results in altering behavior responses which are influenced by normal audition.

Experimental Procedure

The experimental procedure employed was one of delayed speech feedback. Lee (15, 16, 17) and others have reported upon the spontaneous effects of delayed speech feed-back. Reviewing these results very briefly, it has been found that the feeding back of a subject's speech, one-quarter second after he has spoken, produces spontaneous and, thus far, universal impairments in normal speech. The nature of the alterations vary somewhat from subject to subject. The most common speech disturbances being those of stammering, stuttering, perseveration, and a very marked loss in speed of speech organization and tempo. Accentuation, slurring and other variable disorders of speech are clinically very noticeable. Thus far no person of normal hearing has been able to maintain normal patterns of speech with the presence of auditory feed-back. For this reason, this procedure is a very satisfactory technique for detecting deafness-malingering. Deaf individuals do not show feed-back impairment.

Research in this area has indicated that in addition to interference with speech, aurally monitored manual tasks such as rhythmic tapping and Morse Code sending are found to be badly disturbed by delayed feed-back (16). Such results have pertinent meaning for theoretical neuropsychology and cybernetics, particularly as the mechanism of feed-back appears to play a major role in the organization of response behavior. The theoretical aspects of this area of study relate to the whole problem of psychological behavior and also to aspects of psychodynamic behavior with particular respect to the role that hypnosis may play in relation to feed-back phenomena.

The experimental procedure involved the use of a multi-headed Presto magnetic tape recorder and amplification apparatus with an independent

circuit and magnets.[3] The subject spoke into a microphone with the tape recorder set in the recording position. A pair of 500-ohm earphones was attached and plugged into the reproducer jack of the amplifier. Thus the subject had his own speech reproduced in his earphones one-quarter of a second after he had spoken. Play-back gain and volume were adjustable. For purposes of this study both volume and play-back gain were set at maximum. Continued study is under way in which less than maximum feed-back gain will be employed.

In this study speech was restricted to that resulting from the reading of specially selected sections of standardized reading tests and a text selection in order to obtain reading material of a constant and graded nature (4) which would lend itself to objective evaluation and recording.[4]

The selected passages were numerous and lengthy enough to permit their reproduction in each phase of the study. A preliminary investigation had determined the fact that speech resulting from reading was somewhat faster and more accurate in the hypnotic state per se than in the waking state. The differences were not significant statistically but were none the less present. This was taken into account in the experimental design which was as follows:

First the subject was placed in a somnambulistic hypnotic state and his speech pattern was recorded from the experimental passages. There was *no feed-back* present in this state. The results obtained in terms of measures of accuracy and speed were only slightly better than he had been able to do in the waking state. Nevertheless the results used in the comparative analysis in this study are those obtained from the hypnotic state per se without feed-back.

Next the subject was brought into a state of hypnotically induced deafness and his speech pattern was recorded from the identical passages used in the first series. Delayed speech feed-back of one-quarter second was obtained at maximum play-back gain.

Finally in a waking state with maximum feed-back gain, the subject once more read the assigned passages and his speech patterns were recorded.

The Subject

Since the data reported here deals with only one subject, a description of his salient characteristics will be noted. He was a twenty-nine year old male college student capable of depth hypnosis and all of the classical signs of such depth.

Clinical work with him in a state of hypnotically induced deafness was found to produce all loss of startle reflexology and habitual behavior response to auditory stimuli. Like Erickson's subjects, a conditioned response based upon an auditory stimulus was lost when hypnotic deafness was induced. In all clinical respects he appeared to be genuinely deaf.

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[3]The authors wish to express sincere appreciation to *The Presto Recording Corporation, New York, N. Y.*, for generously making available all the electronic apparatus necessary for this study.

[4]Sections from the *Durrell Analysis of Reading Difficulty, Michigan Speed of Reading Tests* and part of an article from the *Psychiatric Quarterly* were utilized in this study.

Results

The results reported here deal with the major comparative aspects of the subject's speech patterns in relation to the three states of speech: *without delayed auditory feed-back, hypnotic deafness with feed-back, and waking speech with feed-back.*

Figure 1 is a time chart indicating the speed with which five passages, ranging from a vocabulary grade level of 8 to 12 were developed into speech patterns. Non-feed-back performance is the most efficient with a steady though slight linear increase in speech time with increased vocabulary difficulty. Hypnotic deafness shows a distinct slowing down in speech speed and more variability than the non-feed-back series. The loss in speed of speech, while statistically distinct, is not of great magnitude. Waking feed-back performance shows massive impairment. The impairment is present from the very beginning but becomes greatest when vocabulary levels become more complex. The difference between the waking feed-back performance and hypnotic deafness is very great.

Fig. 1.

Oral Reading Time Charts
For Increasing Difficulty Of Vocabulary Level

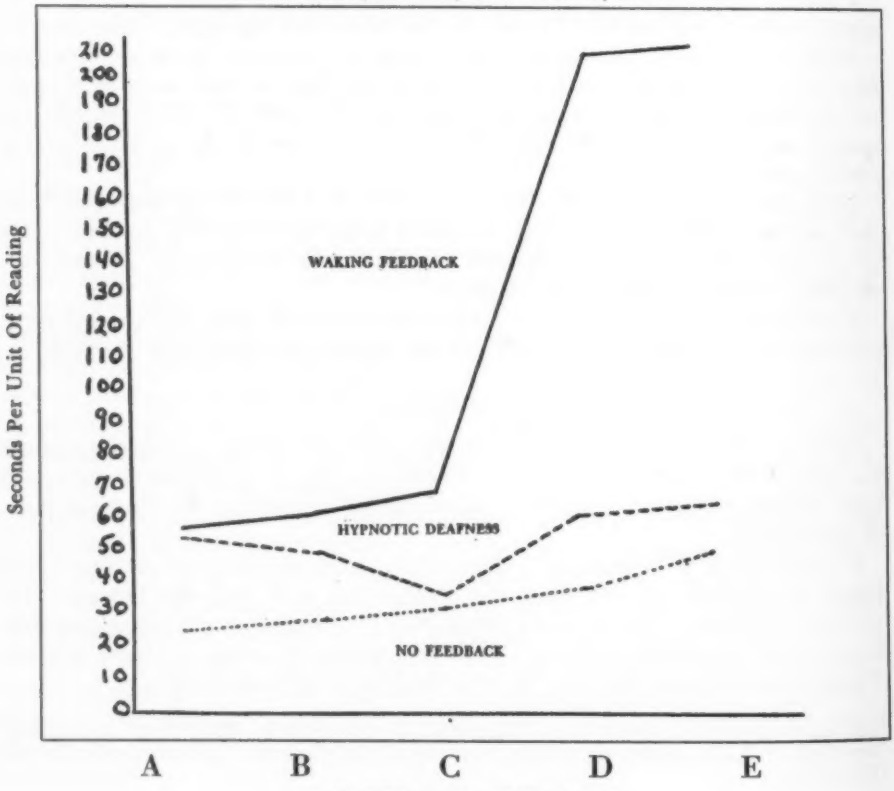


Figure 2 indicates the mean number of speech impairments for eight simple reading passages. In the non-feed-back series the mean speech error rate was 1.0. Hypnotic deafness produced a mean speech error rate of 2.4. Waking feed-back error rate was 7.2. Again in hypnotic deafness distinct impairment of speech function is indicated but not of great magnitude. With the waking feed-back series the error rate is more than seven times that of the non-feed-back series and we see the greatest impairment of speech taking place.

Fig. 2

Average Number Of Speech Errors
For Eight Paragraphs Of Simple
Reading Material

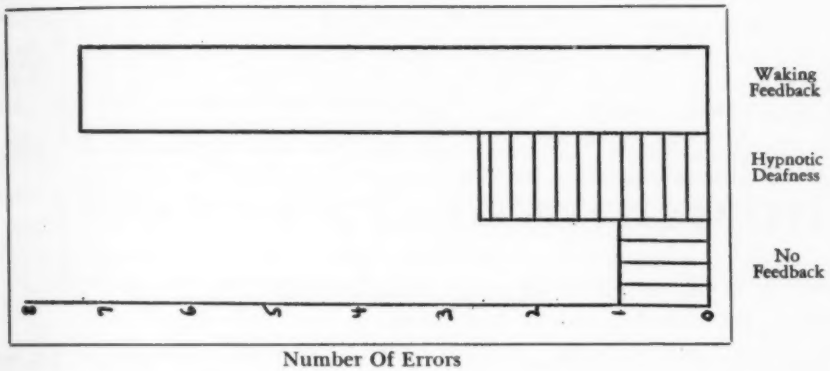


Figure 3 presents data on average oral reading time and variability of oral reading time for eight paragraphs of 8th to 12th grade difficulty. As noted before, the hypnotically induced deafness series shows some impairment of speech proficiency but very slight in comparison with that of the waking feed-back series. The standard deviations for both the non-feed-back and hypnotic deafness series are very similar and reflect a relatively stable performance with little variability. The waking series on the other hand reflects much greater variability.

Fig. 3

Average Oral Reading Time and Variability for Eight Paragraphs of Average Difficulty

	No Feed-back	Hypnotic Deafness	Waking Feed-back
Mean Time in Seconds	30.0	43.3	124.7
S.D.	5.1	5.7	49.5

Figure 4 indicates the mean number of words read orally per minute, for passages of college level difficulty. Non-feed-back performance averaged 265 words per minute. The hypnotic deafness series averaged 189 words per minute – a distinct and relatively significant loss in speech motility. Waking

feed-back performance averaged 76 words per minute – a very significant loss in speed far exceeding the hypnotically induced deafness series.

Fig. 4

Average Number of Words
Read Orally Per Minute For
College Level Reading Material

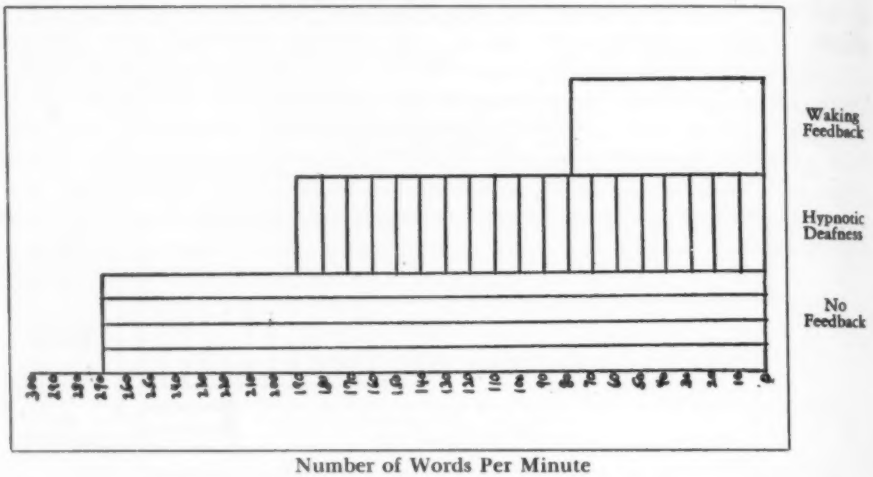
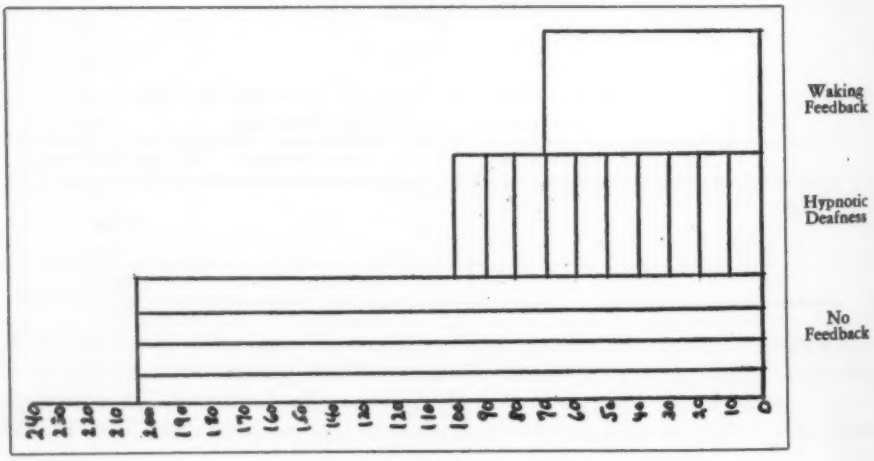


Figure 5 shows the average number of words spoken per minute for very difficult technical passages. The patterning is essentially the same as for college level material except that the losses in speed are more pronounced for the hypnotic deaf series than for either the non-feed-back or waking series. In fact, waking feed-back performance shows only a very slight loss

Fig. 5

Average Number of Words
Read Orally Per Minute For
Complex Technical Vocabulary Level



Clinical Observations

from that which had been obtained on a lower level. Apparently the loss that takes place in waking feed-back is maximum at an early level and maintains this maximum inefficiency regardless of increases in complexity of material. Hypnotic deafness and the non-feed-back series show similar patterns of performance with greater impairment in the hypnotic deafness series.

The reactions of the subject under the conditions of the experiment, aside from their measurable characteristics, were qualitatively convincing and suggestive.

The subject, a well-spoken college senior, read the material in the unhampered control state easily and smoothly. In the waking reading with feed-back, the subject began to slur words. There was a compensatory loudness of the voice and stumbling over consonants. Frequently the subject, shocked by his own voice and unable to control it, burst into hysterical laughter. The discomfort and mounting irritability showed clearly, however.

Introduction of hypnotic deafness, while it did not eliminate all the reactions to feed-back, did, however, give a picture of an individual markedly more calm. Slurring and verbal slips, stuttering and stammering, while still present, were less sharply defined and the number of separate and calculable errors decreased significantly. The voice which, with waking feed-back, was painfully loud, became relatively soft. Apparently the sound of the voice falling upon the subject's ear, despite bone conduction as well as direct effect, became like modulated speech. The subject no longer showed discomfort. There was a painful facial expression in the waking feed-back condition which in the hypnotic state was lacking. The output of effort in the latter condition seemed to be much less than in the parallel condition without hypnosis. The hysterical quality was absent and it appeared that the subject was more matter-of-fact about the reading, gaining more personal satisfaction and maintaining more constancy and regularity of pace.

Discussion

The qualitative picture presented above gives one the impression that hypnosis with the suggestion of deafness through some central nervous mechanism impedes the cortical impact of the sounds, thus making adjustment to feed-back simpler on a physiological basis. There is, however, no indication of peripheral deafness being induced, as claimed by other investigators. Certainly the situation is one of increased toleration of the decibel level rather than of deafness in the usual sense. The impact of intensity falls upon a higher threshold level thereby making for easier manipulation of the situation which ensues. It would appear that the set of the subject is such that he is geared to give minimal response to the excruciating intensity and the constant interference of the feed-back of his own voice.

In terms of muscular action, the hypnotic state showed less tension, less unnecessary movement, less gesticulation. In the non-hypnotic feed-back state, the gesticulation seemed like an overflow reaction rather than a purposive emphasis. The subject behaved as if giving a very important address which he could not quite force through. Verbal blocks elicited arm movements and general bodily and postural straining. Albeit hypnosis failed to

eliminate speech slurring in this subject, it made for a distinct difference which was qualitatively and quantitatively obvious.

Hypnotic control of sensory phenomena has been long attempted and examined. Results in this area, indeed, have provided much controversy, and Weitzenhoffer (24) in a recent volume points out "that, all other things being equal, the degree of hypnotic control an individual can exert over any given function appears to be directly related to the extent to which this function comes normally under waking voluntary control."

While the field of audition has been investigated extensively, several questions are not fully answered, or answerable, at present. Erickson (6) has maintained that hypnotic deafness is the same as neurological deafness. Pattie (18) on the other hand found that in four subjects the allegedly deaf ear was functioning, and in two of the cases the behavior was tantamount to malingering in non-hypnotized subjects. Auditory phenomena seem to be investigated only meagerly from a psychosomatic standpoint. For example, Dunbar (3) says: "there is very little concrete work concerning the psychosomatic aspects of auditory disorders in the past and recent literature." She quotes a case of Rubinstein (20) regarding a girl with complete deafness in both ears, discovered to be psychogenic in origin during hypnosis. Dunbar continues to emphasize that from time to time patients in psychotherapy show deafness, albeit without hearing defect. Emotional factors operate, according to her even in the relief of other syndromes such as otosclerosis wherein, of course, organic damage has occurred. Recent research in the clinic has suggested close relationship between certain conditions of the labyrinth and emotion. Fowler and Zeckel (7) have proposed that Meniere's disease[5] is primarily a psychosomatic disorder elicited by changes in the vascular activity of the labyrinth. While this data does not clarify the auditory problem, it, at least, leads close to it. Fowler and Zeckel find a distinct clumping of the blood in the smaller vessels. This sludging accompanied by vessel spasm in predisposed persons, as a result of emotional stimulation, interferes with normal circulation, with normal labyrinthine function to produce tinnitus and vertigo.

Whether a similar mechanism can explain auditory disturbance of a psychological kind is difficult to say. However, even in the hysterias, the deafness while almost of voluntary appearance, may be increasing and decreasing as a function of environmental change affecting the emotions. Jules Henry (13) in his studies of the Pilaga Indians of Argentina showed that among these people, disorders of audition, speech, and comprehension appear among the aged. These disorders are functions of culturally determined attitudes according to Henry, and will yield to non-hostile human contact, yet it is not at all clear why these disorders are manifest, despite Henry's statement that in this anti-geriatric culture the aged are permitted to die socially before they die physically. What is the mechanism in such psychogenic deafness from the neurophysical point of view?

It is noteworthy that the mapping of auditory projection areas is still in

[5] Accompanying symptoms of Meniere's disease interfere with hearing. They are, among others, "tinnitus, often of a roaring or rushing, noisy type, sometimes hissing or ringing and an impairment of sensitivity, consisting usually of a general, progressive deafness and noticeable fluctuations of acuity from day to day." (26)

progress and that cerebellar, as well as cerebral projection, has been demonstrated by Woolsey and Fairman (28). This evidence leads to the recognition that auditory activity is considerably interlinked with other bodily functions. Henneman, Cooke, and Snider (12) have elaborated, without implication, on the auditory projection from the receiving areas in the cerebellar vermis to cerebral auditory areas I and II.

Intrusion upon neurological integration, through a variety of means should effect the projective interplay involved in complete hearing, thus for example, cortical inhibition would follow anoxia or hypercapnia (8). In the former case audiometric measurement shows diminution of hearing acuity following 10 per cent inhalation of oxygen (9). While this diminution is considerable, it must be remembered that it is not complete and that hearing intrusion is not necessarily an "all or none" phenomenon.

It is provocative, with respect to partial hearing inhibition by hypnosis, that the tonal dip which may occur in an otherwise healthy hearing organ presents no clear evidence of local nerve injury from the histological standpoint (26). While Wever (26) discusses this theoretically, it is not finally demonstrated whether this phenomenon is peripheral or central.

From the psychogenic standpoint, Ramsdell (19) has discussed hysterical and depressive deafness. It is the opinion of one of the writers (H.G.) that the mechanism in these disorders, from the physiological standpoint, is one of emotional inhibition of cortical action. Functional hearing loss, under such circumstances, is not total loss necessarily, and is reversible. Such mechanism might seem to serve in attempting an explanation of the hypnotic hearing decrement implied in the current report.

If psychophysiology and neurology can be interlinked in the foregoing interpretation based on the concept of hypnosis as emotional response (10), then various levels of hearing inhibition short of total deafness could be accomplished. Thus the fact that auditory fibres travel through the cochlear nucleus at the level of the medulla to the inferior colliculus to the medial geniculate body thence to the cerebral cortex, and the fact that in man, fibres cross to the lateral lemniscus and thalamic nuclei (22) is pertinent. This is so because the areas traversed are involved with other functions also, and certainly in the thalamic area strong factors deriving from emotional response may be brought into play. Indeed the extent of autonomic involvement is not currently clarified, nor the extent of indirect involvement through circulatory change in the auditory area elicited by endogenous or exogenous biochemical means.[6]

It can be concluded from the foregoing that the hypnotic state causes changes in the body which are of a similar nature, if not the same, as change induced by emotional experience. With the proper subject and appropriate emphasis on audition, various degrees of hearing decrement can be elicited. While not to be construed as true deafness of hearing, these changes can effectively interfere, it would seem, with discomfort due to extensive sound patterns whether in speech or in noise (19). The maximum extent of interference, of course, is unknown, nor the full nature of

[6]To test the effects of drugs on hearing as well as other sensory phenomena offers an area open for considerable research (11).

voluntary focusing on audition, although the cortical localization of sensory auditory activity and of motor control of parts of the ear needs further investigation and elaboration. Perhaps the "Sensory – Tonic Field Theory" (25) of perception is applicable here in that changes in bodily tonus elicit changes in the perceptual field. Can it be that emphasis on the ear causes emotional response which in turn causes tension in the peripheral auditory mechanism (the stapedius and tensor tympani)?[7] It would seem that the dynamics are more of a central nature.

From the results obtained in this study it would seem that within a state of hypnotically induced deafness, audition *does* take place as evidenced by noticeable speech impairment in response to delayed auditory feed-back. The impairment produced in speech functioning is, however, greatly reduced when compared to that which occurs in relation to delayed feed-back in the waking state. In this sense then, hypnotic deafness does not appear to parallel the neurophysiological aspects of organic deafness. The problem of differential *response* rather than differential reception or *stimulation* appears to be evidenced in this consideration. Although the auditory stimulus remains the same in both waking and hypnotically deaf states, the associated response to this stimulus appears to be markedly different.

In considering the neuropsychological meaning of audition, the inclusion of associated perceptual activity which involves verbal, motor and visual correlates, must be taken into account. That the degree of speech impairment in response to delayed feed-back is the result of the pure auditory stimulus alone is unproven. That the degree of impairment is the result of the basic stimulus plus the perceptual and apperceptual associated activity of a verbal, motor and visual nature involving neural symbols and images warrants consideration.

Theoretical and experimental data from the area of learning theory and perception support this contention (23). Clinically, our knowledge of the psychodynamics of word association activity and auditory association activity supports the idea that response to a given stimulus is as much a response to the associated stimuli as to the basic stimulus (14, 21). The symptom of stuttering also confirms the idea that collateral cortical activity significantly influences response behavior often far beyond the superficial characteristics of the external stimulus (17). Projective techniques such as the Rorschach emphasize the role of secondary stimulation in behavioral response.

Although the work reported upon here is limited to one subject, within the limits of our experimental procedure, the results appear to be meaningful and have warranted the extension of this work into other areas of feed-back in relationship to behavior organization. It is suggested that the differential response to auditory stimulation in the induced state of hypnotic deafness constitutes a state of differential neuropsychological func-

[7] Perhaps such change would interfere with the Brownian motion in the cochlea and thus with transmission of energy (2).

[8] Some distinction between audition as a neurophysiological process and hearing as a neuropsychological process must be considered.

tioning. This alteration in behavior is due not to an auditory loss per se,[8] but to a diminution and limitation of collateral perception and secondary stimulation. To this extent the altered state of auditory perceptual masking induced by hypnosis appears to be valid but does not appear to be deafness.

Hypnosis appears capable of producing an effective resistance against feed-back mechanism, at least with respect to audition. As the aspect of feed-back mechanism and cybernetics (1, 27) becomes more directly applicable to the field of behavior disorders, the role and techniques of hypnotherapy may greatly expand in this regard.

Conclusions

The following results appear to be most salient with respect to the objectives of this investigation:

1. Delayed feed-back in the state of hypnotically induced deafness produces distinct impairment in speech performance. This impairment involves loss of motility, increased errors in enunciation and increasing impairment in proportion to increasing difficulty of vocabulary.
2. The speech impairment found in hypnotically induced deafness is very significantly less than the impairment found in waking feed-back performance.
3. The pattern of speech performance in hypnotic deafness shows a pattern very similar to that of non feed-back with respect to constancy of performance and the linear relationship between performance efficiency and difficulty of verbal stimuli.
4. Waking feed-back performance is significantly more variable and erratic than the non feed-back or hypnotic deafness series.
5. Hypnotic deafness does not appear to follow the same neurophysiological pattern as organic deafness with regard to auditory feed-back.
6. Hypnotic deafness does alter certain behaviorial responses to audition and appears to alter the character and nature of hearing.
7. Hypnotically induced deafness would appear to represent a valid alteration of hearing function but not a state akin to organic deafness.
8. Hypnosis appears to be capable of altering feed-back mechanism of an auditory nature.

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Changes of the Body Image in Hypnoanalysis[1]

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The changes of the body image in hypnoanalysis can be dealt with from very different points of view. Today a simple approach to this interesting phenomenon will be used. In the future still more of the abundant material, interpreted in other ways, might be presented. The term hypnoanalysis is understood to mean that the hypnotized patient in regression, revivification or by looking at a stage works through his visualizations and interprets them himself. The body image not only consists of the changing presentations of one's own body in the mind, but it is built up and accompanied by perceptions, emotions, conceptions, actions, social connections. For lack of time the emotions will be dealt here only insofar as they are connected with other changes of the body image, and actions and social correlations will be cut out entirely. Changes that are brought about only by the induction of hypnosis (3) will not be discussed. Despite the invaluable help of The Annual Review of Hypnosis Literature (1) articles may have been overlooked since literature on hypnosis is distributed among so many journals.

In this paper we will try to superimpose a kind of scheme, so that some order can be created of the innumerable presentations of the many changes in the body image described by patients in hypnoanalysis. But new subdivisions always occur. All examples are from private patients whose hypnoanalyses have been recorded and transcribed and the statements made in the awake state have always been put down as the patient talked. The first major division is in directed and spontaneous changes of the body image. The directed changes can again be subdivided into directly and indirectly directed changes. Regression, revivification and looking at a stage are in themselves directly directed changes. At first regression. A patient was asked when awake: ("Do you see yourself small or are you small?") "I feel myself small and I see myself small, both. Because, if my eye level is not higher than a person's knee, then I am really small. I have all the feelings of being a tot. I know I have never been able to bring my feelings out like that." Another patient described the return to the body image of his chronological age: "That never happened to me before. After you told me, 'your body returns to normal,' I began to grow in length on both ends." (5) During regression the patient sees and feels himself as a child, both may, but must not coincide. Transcript: "Going to do something to a child. And I can't do anything about it. I don't know." ("Do you feel yourself a child?") "Yes." Transcript: "And I was lying there just sort of strapped down and I can see myself as very small. And just I had a feeling of helplessness and hopelessness." But the following answer is possible also: ("Do you feel yourself as a child?") "I feel that I have the mind of a child today,

[1]Read before the 4th Annual Meeting of the Society for Clinical and Experimental Hypnosis, September 1953, The N. Y. Academy of Sciences, New York City.

but not the body." All three transcripts are from the same patient, but from different hypnoanalyses. These distinctions are very clear to the patients. They may be related to the differentiation Schilder makes between the body images brought about by different kinds of sensations, especially the optic and the tactile ones (9).

The phenomenon of the "watcher" has attracted very little attention. It is a spontaneous sequel to a directed change. Harold Palmer in a paper titled: "Three Aspects of Ego-Organization in Relation to Ether Abreaction Therapy (7)," and in an article called: "Pictorial Art, Viewed from the Standpoint of Mental Organization as Revealed by the Excitatory Abreaction Techniques of Psychiatry (4)" was the first author to describe the "watcher" and another occurrence we will discuss later. The "watcher" in hypnoanalysis is similar, but not the same as that which Palmer describes as happening in the third stage of ether abreaction. In hypnoanalysis a patient saw himself as an adult observing himself as a child. "I am looking at myself as an unclear picture. The other is much clearer. I am not an actor. I am an audience. (5)" Another patient saw himself as an adult standing several feet away and above the couch and looking down at the couch or bed or table at himself lying there as a child. Another patient, treated at first with regression, then revivification, regressed in steps until her fourth year said: "I think I was more of a child then than ever before in hypnosis. I could see my grandmother before me and then I could see me as a tiny little child and I could hear her sing. The other dreams that I have (patient means hypnoanalyses) I could see myself as a little girl, but I had the grown-up outlook. It seems I am a little girl, but at the same time I am there as an adult." Quite some time later she stated: ("What do you feel?") "I feel as if I am shrinking and getting smaller and smaller, and by the time I am two or four years old I think as a baby. I see myself as a baby. I see everyone." ("You told me once it is like a movie.") "If you put the question and I am down being a baby it flashes as a picture right away. I can see it very clearly." ("You observe it as an adult?") "Now as a baby. I used to as an adult." The comparison to a technicolor movie is made by most patients. But the feeling of one child watching another one may not be a sequel to revivification and can also happen in simple regression. Transcript: "Living quarters inside. And I am on the outside. But I see that there is another child inside. They keep him covered." ("Who are they?") "A grown up people." ("Your age?") "Two." ("How old the child inside?") "Oh, an infant." ("Why keep that child covered?") "Can't walk." The split of the body image in the subject and into two additional projected images, the "watcher" and a small child, is a rather complicated aspect. It may also originate from the different body images, the optic and the tactile. On the other hand it may be interesting to handle the "watcher."

Indirectly directed changes of the body image ensue when the patient in order to be able to follow a directive has to alter his body image. A patient who felt four years old and in a baby carriage was told to get rid of his father who was blocking his view. In order to be able to do this, he had the feeling that the part of his body from the hips up was growing to adult size, that his arms had adult strength. "And I felt very strong

from the waist up as I pushed him." The father fell to the sidewalk, disappearing into nothing, the carriage rolled away, and the patient, after accomplishing the task felt himself small again, three years old. From then on, he was aware of himself as a strong man. He has since gotten married and has a child.

The spontaneous changes in the body image are legion. Each new patient can add a new subdivision to the arrangement presented here. At first, some part of the body can be felt as missing or as added. Transcript: "The inside of my legs, my penis, my rectum cut off. Just the outside of my legs remained." (Pain?") "No." ("Blood?") "It is clean, like carved out in a circle." ("What is there?") "Cardboard." As a child the patient had been operated on for crooked legs due to rickets. Apart from that he had been threatened with castration time and again. Transcript: "I am trying to cut off the tail I got. I am watching the mirror and I am looking funny. I feel like an animal." This visualization was a symbolization of rectal masturbation by a grownup. A patient reported he was with his mother in the bedroom and then he sneezed. Transcript: "She is doing something. Taking something apart." His mother was separating and fixing artificial flowers which created so much dust that the patient had to sneeze. He had added dust to the body image of his nose and that brought about its somatic function. He had no vasomotor rhinitis.

A change of the dimensions of the body parts can occur, a part can be felt or seen as too large or too small. A patient ended a number of hypnoanalyses by feeling that his arms and face were swelling, except the mouth and nose which seemed too small to supply enough breath. He remembered different occasions, when as a child he felt the same way, as before starting to sleep, in dreams, when he got ether, after a mosquito stung him. Transcript: "I was just wondering why I would have stubs of teeth at that age. I thought kids had their teeth in at that age." This patient was seeing his abbreviated teeth.

Another seldom described change of the body image is multiplication, visualizing the same person multiplied. It is one of the effects of intense tension. Transcript: ("Are you in bed with the other children?") "Yes. I am one of them under the cover." ("Your age?") "Two years old." ("How old are the others, younger or older?") "The same as I am." Multiplication of the own body image is only rarely accompanied by multiplication of its correlations. Palmer in his second article describes a third, Lilliputian stage, comparing it with Gothic drawings in illuminated manuscripts, Egyptian kings' reliefs, the concentrated teeming in Indian art and he states that it is akin to hallucination (4). In ether abreaction the "watcher" appears, "I am watching me" in a stage where many small figures are in restless activity. In hypnoanalysis it is different, as each patient projects his visualizations in his personal way which can no longer be subdivided in stages and the "watcher" can always be present. Multiplication, on the one hand, may be a kind of fragmentation[2] due to intense tension and/or a kind of protective mechan-

[2]The word fragmentation is used in connection with multiplication, because the author's experience indicates that it may be caused by a feeling of being shattered. Each piece is then reorganized into a whole.

ism to keep from being alone during danger. Weinstein and his co-workers reported reduplicative phenomena in patients with brain disease which concern the environment (10), (11). They relate them to the syndrome of denial occurring especially in patients with compulsive drives. How far their patients are comparable to those patients in this series is hard to say. But the patient whose transcript has been given had an enormous amount of social anxiety, one of the features of the compulsive personality. Another patient, who had had a schizophrenic attack in puberty and was sent with the diagnosis of a compulsion neurosis with social anxiety often visualized multiple persons, symbolizing himself. It seems also that when the patients improve, they visualize these multiplications less and less. In time, it may be possible to formulate a diagnosis by the way a patient presents his visualizations, which are projections of the unconscious mechanisms (6).

Another change of the body image is an entirely symbolical one. The body may be visualized as an inanimate object, an animal, another human. The step from inanimate object to animal to human seems also to show progress in treatment. A patient for a long time constantly visualized airplanes, but at times talked about dressed chickens. A later transcript: "And again I thought of a chicken. And I thought well they cut the chicken and they cut me. And somewhere I think I saw blood too. And I thought well there is blood from a chicken. And I thought well what if they do the same thing to me as they do to the chicken. That might mean my head would leave my body. And I keep thinking of taking insides out of a chicken. And wondering if my insides would be taken out or if they already had been taken out. And I want to be sure to keep my head on my body." This patient could never eat chickens' necks. Asked about the relation of airplanes to chickens, he said they look like beheaded chickens. As a child he apparently received one or more injections in his neck, which caused great anxiety.

Subsequent to the changes of the whole body image are changes in tissues, organs and body systems such as gastrointestinal, circulatory, etc. For instance, the patient who talked about the chicken, wondered about its insides. Interesting is the information of a patient who felt that his body was filled with water and worms. It was a sequel to oral and anal manipulations and the threats of his mother that worms would grow in him. Transcript of the symbolization of his bowel movements when he felt himself to be three: "Little dwarfs are playing, are running around. They look like little animals and they stand on their two legs. Brown cats. They are just playing and they seem to be happy." A man with a long stick sent them into hiding, getting smaller like mice. "They come from the toilet and they go into the toilet too." Another patient's transcript: "The first thing that occurs to me is that my heart starts beating fast. It seems that my heart is beating up here in my neck. And I know it should be over here." This patient was scared by the rapid beating of his heart, but reassured by its beating at all. These sensations and visualizations seem to be combinations of actual sensations, of childhood fantasies and of misconceptions. The following transcript is different: "My throat feels sore all of a sudden. The right side of my throat. It's unbelievably sore." Then: "I keep wanting to see what's inside. The soreness even reaches up into my ears." The awareness of his throat, apparently

a direct reliving of childhood experiences, took about three minutes and passed the moment the patient was awake. The genitals may be visualized as just fire burning in water. This information is similar to many a patient gave in hypnoanalysis, only shorter: "It was something that would take possession of me, cause me to have a little erection, something that would have pleasure at my expense." Guilt feelings and castration threats resulted in a kind of projection of his own erection. In urination, patients distinguish between a pleasant warm and an unpleasant cold wetness, depending on the momentary situation. But this leads to the skin sensations.

Feeling wet can have other reasons too. Transcript: "There is a storm. And there is rain, heavy rain." ("Coming on you?") "Yes." ("Feel the storm?") "Yes." ("On your face?") "All over the rain. Coming down hard." ("On your body?") "Yes." The patient saw, heard and felt it in hypnoanalysis, was frightened and felt abandoned. In other cases rain was a cleansing agent. In reliving a childhood event a patient felt the tear on his mother's cheek, when she held him close. Transcript: "My hands burn me so. They are so sore. Because they hurt me and they are shaking and I am all wet and they sting and they feel so funny." This sensation persisted through nearly half an hour and was a sequel to the reliving of having his hands whipped.

The functions of the various sense organs are felt very keenly. Visualization itself is projected intrapsychic seeing. Some patients start with white and black images and go to colors, others immediately see brilliant pictures. The colors may be symbolical. Boernstein has reported similar results with other methods (2). Hearing of more than single words or short sentences is rare in hypnoanalysis, but most patients may know what the other person has said. A patient who was directed to listen to his grandmother's singing reported afterwards that he saw the colors less vivid than in other hypnoanalyses. Apparently the simultaneous functioning of both higher senses is hard to perform. The lower senses smell and taste are very easily excited in hypnoanalysis. Transcript: "It doesn't smell very good. It smells like in the bathroom." Transcript: ("You had the taste of milk?") "Yes. I had it. It was very little I got, but I had the taste." Transcript: ("Tell me what was the taste you got in your mouth?") "That was a bitter taste. I didn't like it." On questioning after hypnoanalysis the patient stated the taste was like a bitter medicine, he does not know any other comparison.

The last sense we have to talk about is the equilibrium sense, which together with kinesthetic sensations plays such a great part in the building up of the body image. Transcript: "And the ground gets crooked and I am standing and I am lying on the side. Afraid I am going to fall. I am just going to fall over to the side." That is a symbolical visualization a frightened patient presented when he saw the hall toilet overflow and felt himself three years of age. There are also kinesthetic sensations involved. Transcript: "Because I am afraid of the stairs. Because when I start I was never sure what my foot was going to do because I was so weak that sometimes I didn't know whether I could." This was reliving of a childhood episode. Later on this patient had much trouble with his equilibrium and coordination. Another patient complained about phobia of high spots and the elevated,

which disappeared after the reliving of a frightening episode on the stairs.

The connections of the changes in the body image in hypnoanalysis to childhood fantasies, dreams, misconceptions, overwhelming real events are apparent. The patient, whose transcript about multiplication has been given, was always conscious of the following childhood fantasy. A bridge tower was sucking in children, smashing them to pieces and spitting them out. In hypnoanalysis it developed that his father was as strong, as frightening and as forbidding as a bridge tower. The smashing or fragmentation, as it has been named in multiplication, was partly a projection of the patient's own sadistic impulses, asking for retaliation, partly a description of the cruelty of his drunken father. Part of a dream of the patient, who spoke about beheading in hypnoanalysis: "I was a spectator in an audience and they were performing beheading." Patient shuddered at every chopping off of each head.

We have a double system of memory; one is a complete and true copy of the actual experience, the other is incomplete, symbolical, fleeting. Past experiences are always present unchanged in form of thoughts or diagrams, connected with the knowledge which will bring them into consciousness. Every human experience is connected with the experience of one's own body. These last three sentences are cited from Schilder (8). If he is correct, then by means of hypnoanalysis we bring to the fore either the actual experiences or their symbolizations. The body image being the nucleus of the ego (9), the visualizations in hypnoanalysis reproduce what the weak ego of the child once felt or thought about its own body in relationship to events which overwhelmed it.

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An Experimental Study of Hypnotically Induced Auditory Hallucinations

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A. Background

The possibility of inducing hallucinations under hypnosis has been known for many years. During the course of studies on sensory and motor phenomena in hypnosis, the occurrence of spontaneous hallucinations was discussed as a point of interest and it was shown by means of a case report that the psychodynamics of such a spontaneous auditory hallucinatory experience could be fathomed within the setting of a hypnoanalysis (1). Following this report, there was presented an experimental hypnotherapeutic procedure involving induced auditory hallucinations, and a demonstration was offered of the incorporation of this hypnotic technique within a treatment setting with comparisons between imagined and hallucinated conversations (2). Certain advantages accruing to the patient in treatment when auditory hallucinations were employed pointed to the desirability for further research along these lines.

In the meantime there has been apparently a lack of appreciation on the part of some investigators in clinical and experimental areas of the significance of differentiating imagined sound or conversation as part of ordinary routine thought process from hallucinated sound or conversation where the qualities involved approach or equal sound qualities from external stimuli. The same lack of differentiation has applied in the visual sphere when no distinction has been drawn between imagining a scene or when dreaming hypnotically or nocturnally in contradistinction to seeing on a truly hallucinatory level of functioning while the subject's eyes are open rather than closed. This differentiation involving both visual and auditory spheres would appear to have implications for additional studies of perception and offers opportunities for further explorations in psychotherapeutic areas. Needless to say a fascinating and pertinent field for investigation is the neurophysiology of these diverse phases of behavior.

In a previous report it was pointed out that many difficulties in interpretation beset the investigator, and the psychodynamic functioning of the subject may be such that the information he reveals may tend to obscure the real nature of the events observed (3). Thus a patient who had apparently hallucinated on an auditory level a meaningful conversation with his mother during the course of a hypnoanalytic session maintained on questioning that the conversation had been imagined as a function of ordinary thought process. When the scene was relived it became quite clear that his auditory perceptions were in fact being hallucinated with sound impressions possessing qualities of external stimuli. The details will not be repeated here except to say that the reasons for his misinformation were clarified on the basis of their considerable psychodynamic significance for him at that time.

Another patient involved in the aforementioned report was able to hallucinate conversations with her parents on an auditory level. When she conversed with a figure representing a clearly artificial construct of her own unconscious, her conversation was on a level of thought process peculiar to more ordinary type of functioning when to all appearances she could not imbue this construct with a voice of its own. That she might be able to achieve the latter on other occasions was not questioned, and it was indicated that other subjects might easily be able to hallucinate speech emerging from a figure that is not a "real" person but rather a projection of the unconscious such as the figure just alluded to (4).

It has been stated, furthermore, that a question arising from these explorations is whether or not hallucinations can be differentiated in terms of their appearing to be external stimuli, spacially apart from the subject, in comparison to such stimuli which nevertheless appear to originate internally — spacially within the subject. In the latter case there would still have to be the differentiation between the experience as ordinary thought process as part of "imagining", and the event in terms of quality of an "outside" stimulus, although apparently emerging spacially from within. The latter issue served as the specific starting point, and the previous experiences as the general background for the experiment which will be described in this report.

B. Subject and Setting

During the course of treatment of a patient in her thirties a point was reached where an exploratory period seemed favorable in order to evaluate additional channels for investigation. Hypnosis had been employed in therapy. The use of hypnotic hallucinatory experiences on an auditory level was selected (without previous discussion with the patient nor previous functioning by her along these lines) for such an approach, and the investigator kept in mind some of the questions and points of interest outlined at the beginning of this report. The procedure, however, was not rigidly prepared because it seemed desirable to permit spontaneity on the part of the patient. Frequently so much can be learned in this way in contrast to limitations resulting from a highly controlled experimental design (5). Obviously too, this was a therapy session. In addition, knowledge of the psychodynamics in such a case often outweighs the potential advantages of routine experimental technique. Despite this, however, psychodynamics will not be stressed now. Each phase of the exploration was deliberately limited in scope so that a series of responses could be elicited and evaluated with interest centered essentially at this time on the descriptive aspects of the patient's experience.

C. Results

Part 1. The patient was placed in hypnosis. Imagined conversation in contrast to hallucinated sound was used as a starting point in order to have this serve more or less as a control for the induced hallucinatory procedure which would follow.

The patient was told that she would imagine a brief conversation with another person and would then describe it. "C..... (her daughter, nine years

old) was talking to me and she said, 'I love you mommy. I love you very much. Please love me.' She was begging me. I said, 'I love you sweetheart.' " When the patient was asked whether she heard her daughter's voice she replied that she only imagined it.

No specific individual was mentioned to the patient in order to permit the spontaneous development of theme and setting based on the psychodynamic requirements of the patient at the moment.

Part 2. The patient was told that soon something different would occur. She would have another conversation with her daughter but this time she would actually hear her daughter's voice. This point was reemphasized and the patient acknowledged her understanding of the instructions. Shortly thereafter the patient showed a marked emotional response and began to cry. When asked what had happened, she replied, "C..... said, 'Shit and I hate you mommy.' She screamed it and she said, 'You're mean to me.' "

When questioned about the quality of the hallucination the patient said that she actually heard the voice. The therapist was interested in learning that the voice, however, seemed to the patient to be her own rather than that of her daughter. When asked to compare it with the therapist's in terms of its source, the patient replied, "It was like someone screaming inside of me. It was as if I wanted to shout it out loud."

The points of interest here are the substitution by the patient of her own voice for that of her daughter, the actual hallucinating of this voice, and the spacial localization of the voice within the patient rather than from an external source. This issue is related to the question posed earlier in this report regarding possibilities of localization within and outside of the patient's "physical boundaries." The incident creates additional themes for exploration having to do with the hallucinating of one's own voice. It also raises the question of the possibility and meaning of hallucinating another person's voice as of apparent internal spacial origin in contrast to external origin.

Casual inspection of these data and reliance only on its descriptive aspects might tend to raise an issue of the validity of the hallucinatory experience in view of the fact that the patient had been instructed to hear the child's voice and found herself hearing her own, the latter point in itself seeming rather odd. The meaningfulnness of this result can be apparent only by evaluating the material from a psychodynamic view and, as indicated previously, these details will be omitted. Suffice it to say that this patient, who was known to have mixed feelings toward many people in her family and to be in conflict about her attitudes toward them and their feelings toward her, was evidently projecting on to her daughter certain feelings which she definitely had about herself.

Part 3. The next incident appears to serve as a control for the preceding events in connection with apparent validity of hallucinatory experience in contrast to imagining as part of ordinary thought process, and in relation to the issue of hypnotic compliance involving granting the hypnotherapist what the patient believes he is searching for.

The patient was told that her husband was going to speak to her and that she would hear his voice. The usual repetitions were given for emphasis.

The patient revealed, "He said, 'You've wanted my money and you've screwed me up. You're the reason I am what I am'." This type of comment would be in keeping with their relationship. On additional questioning, however, the patient revealed the following in response to questions. Dr.: "Did you hear his voice?" Pt.: "No, I didn't." Dr.: "Did you hear anything?" Pt.: "I imagined a voice but it wasn't E.....'s." Dr.: "Who was it?" Pt.: "I don't know. It was a man's voice." Dr.: "You don't know?" Pt.: (Shakes head.) Dr.: "You imagined the voice?" Pt.: "Yes."

The patient was in conflict about her husband. Yet, here, in contrast to the earlier incident, no hallucinatory activity resulted. The possible psychodynamic implications were not explored at this time. Furthermore, the stage had been set for hallucinatory experience, yet the patient remained uninfluenced by the precedent nor was there any indication that hypnotic compliance was in operation leading to distortion of experience or claims.

Part 4. The next incident reenforces the points outlined above. The patient was told that her brother would talk to her. She started to cry. "This was my youngest brother. The one that was in North Carolina. He said, 'I hate you. You're getting all the attention I should have gotten. That's why I'm mean to you'." On inquiry she revealed that she did not hear his voice. She only imagined a voice and it was not that of her brother. She did not know whose voice it was. In addition, she added, "I saw him though." The writer classifies the latter experience under the heading of visual imagery but not of a hallucinatory category. Some investigators refer to it as a visual hallucination which the current investigator believes is inaccurate and misleading. This patient had her eyes closed. Further details have been elaborated elsewhere (3).

Part 5. The patient was permitted again to select spontaneously a person with whom she might converse. She was told she would hear someone talking to her and that she would not simply imagine the voice. She cried aloud and sobbed profusely. "It was my mother talking to me. She was yelling in Jewish. She said . . ." What her mother actually said cannot be translated literally with complete retention of its basic significance. The invective so translated would say – go away you piece of shit; go slam your head against the wall. The specific type of invective would be familiar to those acquainted with the language. As the patient revealed this she cried constantly. Then, interestingly, when asked whether she heard her mother she denied it, but her reaction seemed so marked that she was asked again and responded, "I don't know. Maybe I'm just scared." In order to check on this she was asked to listen again. She suddenly recoiled physically, shouted "Ooooh!" and pressed her hands against the sides of her head. Dr.: "What happened?" Pt.: "I got scared." Dr.: "What happened?" Pt.: "It was my mother starting to (talk). She breathed into my ear. It stopped it." She was told she would hear her mother again. Once more she recoiled. "Ooooh!" She covered her ears with her hands. Her mother called the patient a couple of times, using her Jewish name. It was the way she used to call to her when her attitude was a loving one. She heard her mother's voice as it had always sounded. "It was different from the other conversations (outlined previously). I felt as though she wanted me." She was surprised to hear her mother's voice.

It came from "up in the sky."

This experience was different from the previous incidents in that a voice of someone other than herself was heard, and it was not "imagined". Her initial reaction of attempted denial is remarkably similar to that of another patient, mentioned earlier, who had hallucinated conversations with his mother, only to deny later the validity of the hallucinatory experience, and following that to gain insight into his resistance and the psychodynamics when hallucinating once again the same material when he relived the incident hypnotically. This points to the care required in evaluating such data and reenforces rather than dispells the attention which must be given to the complexity of the phenomena. The present patient's mother was actually dead. The localization in space as described was perfectly consistent with culturally determined influences on this patient and other personal reactions and attitudes on her part.

Part 6. In order to reevaluate the experience involving her husband, the patient was asked whether she wished to hear him again. When she agreed, the instructions were repeated and she was told to listen to what he said. She did not hallucinate his voice. Instead she imagined him saying, "Dirty son of a bitch. O. K. How much do you want?" (He reached into his pocket.)

This phase served as a control, in a way, on the previous hallucinatory experience. It was not clear why she was not hallucinating this contact with her husband despite the instructions and regardless of her demonstrated ability to hallucinate. The dynamics were not investigated.

Part 7. In order to continue the investigation but, at the same time, to relieve the tension, the patient was told that she would hear pleasant things said by someone, although the therapist did not know who this would be. It was reemphasized that she would hear this person and that something pleasant would be said.

Pt.: "One of my nephews was calling me. He said, 'Aunt K....., Aunt K..... You're very smart.' " Dr.: "Did you hear him?" Pt.: "I heard the Aunt K....., Aunt K..... very clearly. (The other) sounded like I was pushing it." This incident is of particular interest, then, because one portion of the response to the suggestion differs from another and serves as an additional control. The patient was able to become aware of her attempt to force a hallucination in contrast to her actually experiencing a hallucination without the attempt to promote it. The difference in the second part of the experience can be understood in view of the patient's known concern about wishing to appear intelligent. At the same time she would feel guilty whenever she would do or say something in an effort to give this impression, but when she believed the effort was unwarranted or involved her doing something that was questionable. Her wish to hear a remark regarding her smartness was negated by her discomfort in regard to this wish. As a consequence of this the remark could not be ascribed to the nephew through a hallucinatory experience.

Other enlightening aspects to this incident were the spacial localization of the nephew's voice outside of herself and a descriptive discrepancy between hallucinatory sound and visual image. Regarding the first, his voice seemed to come from "far away." As for the second, the patient vis-

ualized her nephew sitting on steps outside his house. He was a little boy. His hallucinated voice, however, was of his current age, the late twenties. The visual spacial and temporal elements in relation to the hallucinatory experience would have denoted an even greater descriptive discrepancy if the visual imagery had been actually a visual hallucination. From the view of dynamic significance the discrepancy would have been more apparent than real. It would have been similar to what has been described as descriptive spacial and temporal discrepancies in regression experiences where the dynamic core takes precedence over descriptive elements (4). Thus a subject may be regressed apparently to one age level but find himself in an environment appropriate to another age level. On the surface this may appear to discredit the "validity" of the regression, but the age level and setting may actually be dynamically integrated and this may take precedence over descriptive considerations and conventional time and place chronology.

Part 8. An attempt was made to have the patient hallucinate the voice of the therapist. She was told that in a moment he would say something to her and she would reveal what was said. There was a pause but no response. She was then asked a couple of times "What is it?" and "What did I say?" The lack of initial response seemed to indicate clearly that she had no hallucination. When the questions were then asked of her she looked puzzled and simply repeated the questions in the same way that she would describe what was said in previous hallucinatory experiences. To all appearances she could not be induced to hallucinate but when questioned she seemed to experience the questions as actual hallucinations, or at least had difficulty in differentiating the therapist's actual voice within this setting from a hallucination.

Part 9. To explore further, the patient was told that she would hear the voice of someone else but the therapist did not know who it would be. This was repeated, as in all of the preceding instructions. "My aunt said, K..... my darling." "My darling" was said in German and the patient's name was spoken in Jewish. Dr.: "Did you hear the voice?" Pt.: "Yes." Dr.: "Was it her voice?" Pt.: "Yes." Dr.: "Where did it come from?" Pt.: "It was here. It was close to me." Dr.: "In the room?" Pt.: "Yes. I saw both of us together in my old house where I was born."

The visual imagery, to repeat, was not what the writer refers to as hallucinatory. The aunt's voice was actually hallucinated. This example supplies spacial localization at the actual physical location of the patient – the same room. The setting in visual imagery, however, is quite different. Furthermore, on questioning the patient revealed that in visual imagery she was a little girl. Her aunt was an old lady, her age being consistent with the setting involving the patient's previous home. The patient mentioned hearing her aunt's voice clearly. When asked whether she was surprised, she stated that she was surprised to discover that it was her aunt who was hallucinated but the auditory hallucination itself did not surprise her.

Part 10. In bringing this series to a close it seemed advisable to introduce a more pleasant aura if possible. The patient was asked whether she wished to hear her daughter again. She replied that the daughter looked just like

this aunt. When asked whether she wanted to hear something pleasant she seemed uncertain so she was told simply to watch what unfolded.

"I heard – at first I didn't hear her voice but it seemed she was speaking into my right ear and asked, 'Is this your good ear, mommy?' Then I actually heard her saying, 'No! No! No!' It was not her now. It was her when she was a little baby." (The daughter was nine years old at the time of this study.) Previous comments regarding spacial, temporal, and psychodynamic implications still obtain in the opinion of the writer and will not be repeated here.

Following this last experience the patient was questioned further about her hallucinations. She revealed that a difference between the hallucinated voices and the therapist's voice as he was now speaking was the vibratory quality of the latter. It would seem, then, that in her hallucinations she did not reproduce cortically the sensation of sound vibration. Reproduction of sensation involving end organ receptors did occur, however, when she recoiled from the feeling of her mother breathing into her ear. The discrepancy again would appear to exist in its descriptive aspects, but the core of understanding the varied aspects of sensation and response would have to be based probably on the psychodynamics of the patient's functioning at the moment.

D. Summary

An experimental study of hypnotically induced auditory hallucinations was incorporated into therapeutic contact with a patient at a time when an exploratory phase of treatment process seemed appropriate. The study was divided roughly into ten parts, nine of which involved attempts to induce hallucinations on an auditory level following an initial control procedure involving "imagined" conversation. Choice of persons to be hallucinated was made at times by the therapist and at times this was left for spontaneous development by the patient. Some of the episodes involved marked emotional participation by the patient. Others were less intense. "Imagined" conversations were distinct from hallucinated comments. Her own voice when hallucinated emanated from within herself. Other hallucinated voices had external origins. Some were far away. Her aunt's voice was in the same room. Spacial and temporal elements were divorced from their conventional relationships and distorted in keeping with psychodynamic needs. The patient was able to discuss her experiences and evaluate certain descriptive and dynamic qualities. Certain parts of the total experience served as controls in the evaluation of other parts. The beginning of hallucinatory behavior did not set a pattern for continuous similar activity. Responsive behavior varied from time to time. A hallucinatory episode might be followed by an "imagined" conversation, although instructions remained the same. Deceased persons were hallucinated on an auditory level. This type of episode with her mother had considerable emotional impact. Her aunt died twenty years ago. Her husband was not hallucinated. Responses involving her daughter showed greater complexity.

Further studies are in order in connection with the neuropsychological and neurophysiological elements in such hypnotic hallucinatory activity.

Such elements as they play a role in visual imagery as described here and in visual hallucinations are also to be examined further. Aside from extensions of the type of investigation presented here, inroads may be made into an understanding of spontaneous hallucinatory activity among psychotic patients through the utilization of hypnotic exploratory methods. This would have to be preceded by more extensive studies of hypnosis in relation to psychotic patients than have been attempted thus far. The procedure discussed here and many potential ramifications makes possible a wide variety of investigations which can be planned for the future.

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